www.amccon2008.org

ABSTRACT BOOK

National Conference on Emerging Issues in Public Health

Thursday– Sunday,
January 10-13, 2008

Achutha Menon Centre for Health Science Studies
SCTIMST, Thiruvananthapuram, Kerala, India

National Conference on Emerging Issues in Public Health

Advisory Committee

Dr K Mohandas, Director, SCTIMST

Dr K S Reddy, Chairman, Public Health Foundation of India,

K. Sujatha Rao, Additional Secretary & Director General, NACO

Dr M Krishnan Nair, Former Director Regional Cancer Centre Trivandrum,

Dr Vishwas Mehta, Secretary (Health and Family Welfare), Government of Kerala

Dr M D Gupte, Director, National Institute of Epidemiology, Chennai

Dr G S Bhuvaneshwar, Head, BMT Wing, SCTIMST

Dr Narayanan Nair, Director, CDS, Trivandrum

Organizing Committee

Chairman: Dr K Mohandas, Director, SCTIMST

Secretary: Dr K R Thankappan, Professor and Head, AMCHSS, SCTIMST

Members:

Dr K Radhakrishnan, Professor & HOD, Department of Neurology, SCTIMST

Dr Jagan Mohan Tharakan, Professor and HOD, Department of Cardiology, SCTIMST

Dr CC Kartha, Professor and HOD, Department of Cellular and Molecular Cardiology, SCTIMST

Dr. Douglas Linsby, Medical Superintendent, SCTIMST

Dr V Raman Kutty, Professor, AMCHSS, SCTIMST

Dr TK Sundari Ravindran, Honorary Professor, AMCHSS, SCTIMST

Dr. P S Sarma, Additional Professor, AMCHSS, SCTIMST

Dr. Mala Ramanathan, Additional Professor, AMCHSS, SCTIMST

Dr. K Srinivasan, Associate Professor, AMCHSS, SCTIMST

Dr. Biju Soman, Assistant Professor, AMCHSS, SCTIMST

Dr. Manju R Nair, Scientist C, AMCHSS, SCTIMST

Mrs. G Geetha, System Manager, SCTIMST

Mr. Vijayakumar, HOD, Biomedical Engineering SCTIMST

Mrs Hemalatha, PRO, SCTIMST

Mr Chandrashekharan Nair, FA & CAO, SCTIMST

Scientific Committee

Chairman: Dr V Raman Kutty, Professor, AMCHSS, SCTIMST

Members:

Dr K R Thankappan, Professor and Head, AMCHSS, SCTIMST

Dr TK Sundari Ravindran, Honorary Professor, AMCHSS, SCTIMST

Dr CC Kartha, Professor and HOD, Department of Cellular and Molecular Cardiology, SCTIMST

Dr K Radhakrishnan, Professor HOD, Department of Neurology, SCTIMST

Dr Jagan Mohan Tharakan, Professor and HOD, Department of Cardiology, SCTIMST

Dr Mala Ramanathan, Additional Professor, AMCHSS, SCTIMST

Dr K Vijayakumar, Professor, Department of Community Medicine, Government Medical College, Trivandrum

Dr P S Sarma, Additional Professor, AMCHSS, SCTIMST

Dr. Kabir, Selection Grade Lecturer, Government College for Women, Trivandrum

Dr. K. Navaneetham, Centre for Development Studies, Trivandrum

Dr. Aleyamma Mathew, Regional Cancer Centre, Trivandrum

Dr. Anil Mathew, Associate Professor, PSG Institute of Medical Science & Research, Coimbatore

Dr. Vikram Patel, Professor, Lodon School of Hygiene & Tropical Medicine, UK & Sangath, Goa

Welcome Message

On behalf of the organising committee it is our pleasure to welcome you to the National Conference on Emerging Issues in Public Health held at Achutha Menon Centre for Health Science Studies of the Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, Kerala, India during January 10-13, 2008.

India has seen significant improvements in health since its independence, as indicated by reductions in mortality and increase in life expectancy at birth. However the impact of these gains have not been uniform across populations. Inequity still exists in terms of health outcomes across rural and urban, north and south, rich and poor and educated and uneducated. The reasons for the inequities are manifold and they have become particularly visible with the spurt in the economic growth in the region.

Infectious diseases, maternal and perinatal conditions continue to contribute to a major chunk of morbidity and mortality in the country. In addition to Tuberculosis, Malaria and HIV/AIDS the country has been witnessing epidemics of re-emerging infectious diseases like Dengue, Leptospirosis and Chikungunya. We are also undergoing rapid epidemiological and demographic transition and this is reflected in the rising burden of chronic non-communicable diseases.

Rapid urbanisation, industrialisation, changes in lifestyles and consequent increase in risk factors such as tobacco use, unhealthy diet and physical inactivity levels fuel this trend. There are also overriding environmental and mental health issues that cannot be overlooked. The double burden of communicable and non-communicable diseases thus present a formidable challenge on the already resource limited health systems. This multifaceted problem calls for an approach grounded in a public health perspective, based on prevention and health promotion rather than on the curative norm that prevails.

The investments to tackle these health issues in terms of curative and palliative care will be huge and threatens the sustainability of the already resource limited health systems. Though the foundations of the health care system including medical education in India were laid with the vision of creating human resources in health informed of the social and economic contexts in which people live, the increasing urbanisation, privatisation, emphasis on technology and specialisations in medical training as well as service delivery have eroded this philosophy. There is, therefore, an urgent need to build capacity for public health human resources, research and effective public health interventions.

The national conference hosted by the Achutha Menon Centre for Health Science Studies, SCTIMST, seeks to bring together scholars and practitioners to discuss these public health challenges, share experiences, and deliberate on strategies to build capacity to identify and respond to the health needs of the people, create public health evidence and build evidence based health policies.

We also take this opportunity to welcome you to our centre, a centre for excellence for public health training and research in India. We envisage that this conference will provide a venue for collaboration, networking, sharing of experiences, stimulating discussions and fruitful deliberations that will serve to further advance public health education, research and interventions nationally and globally.

We hope that this conference will prove to be as enriching and memorable for you as it has been for us in the organising committee.

Organising Committee

January 2008

MC CON 200

CONFERENCE PROGRAMME

JANUARY 10, 2008, THURSDAY

15:00 to 16:00 — **PROFESSOR T.N. KRISHNAN MEMORIAL ORATION**

Research with the People

Abhay Bang
Director, SEARCH, Gadchiroli, Maharashtra

18:15 — **INAUGURATION**

Shri Kapil Sibal
Honourable Minister for Science and Technology, Government of India

JANUARY 11, 2008, FRIDAY

PLENARY SESSION I - MAJOR INFECTIOUS DISEASES

Auditorium : 9:00 to 11:00

Moderators : Richard A Cash, Harvard School of Public Health
Jayaprakash Muliyil, CMC Vellore

9:00-9:30
Current Status of HIV/AIDS in India and Control Plans
K Sujatha Rao
Additional Secretary Health and Family Welfare Government of India & Director General, National AIDS Control Organization

9:30 to 10:00
Revised National TB Control Program-Challenges ahead
P R Narayanan
Director, Tuberculosis Research Centre, Chennai

10:00 to 10:30
Current status of Malaria in India and future plans
Dr. K. Vijayakumar
Professor Department of Community Medicine Government Medical College, Trivandrum

10:30 to 11:00
Emerging Epidemics in Kerala
Jacob John
Former Professor, Christian Medical College, Vellore.

11:00 to 11:30
Tea Break

PLENARY SESSION II - SEXUAL AND REPRODUCTIVE HEALTH ISSUES

Auditorium : 11:30 to 13:00

Moderators : Amar Jesani,Centre for Studies in Ethics and Rights, Mumbai
Poonam Muttreja, Director, MacArthur Foundation, India Office, New Delhi

11:30 to 12:00

Human resources for comprehensive EmOC: an innovative partnership with private sector obstetricians to provide skilled care at birth to the poor in India

Amarjit Singh

Principal Secretary (Family Welfare) and Commissioner, Govt. of Gujarat

12:00 to 12:30

International Politics of Sexual and Reproductive Health- Broken Promises, Emerging Crisis

T K Sundari Ravindran

Honorary Professor, Achutha Menon Centre for Health Science Studies, SCTIMST

12:30 to 13:00

Government Initiatives for Safe Motherhood in Tamil Nadu

P Padmanabhan

Director, Dept. of Public Health and Preventive Medicine, Government of Tamil Nadu

13:00 to 14:00

Lunch Break

Poster Exhibition (See page 26)

Seminar on Emerging and Re-emerging Infections

Auditorium : 14:00 to 17:30

14:00 to 15:00

Session 1 Viral Fever Management Experiences

Chair: Amarjit Sinha, Joint secretary, NRHM, MOHFW, Government of India

Re-emergence of Chikungunya: Tamilnadu experience

M.V. Murhekar

NIE (Tamil Nadu)

Re-emergence of infections in Kerala

Vishwas Mehta

Secretary, (Health and Family Welfare) Government of Kerala

Re-emergence of infectious diseases in South East Asia

Rajesh Bhatia

WHO SEARO

Re-emergence of Chikungunya in Kerala
V. Arankalle
National Institute of Virology, Pune

15:30 to 16:30
Session 2 Presentation of papers on Emerging and reemerging infections
Chairperson: Dinesh Arora, Mission Director (NRHM), Government of Kerala.

Ab_86: Clinico-epidemiological features of Chikungunya epidemic at Alappuzha
Ramesh K (Kerala), Anish T.S. (Kerala), Sreekala K N (Kerala),

Ab_127: Treatment costs and work time loss due to an outbreak of Chikungunya in rural Orissa, India
Saji Saraswathy (Orissa), Ashis Das (Orissa), Madan Mohan Pradhan (Orissa)

Ab_128: Breeding preferences of Aedes mosquitoes in relation to different ecological settings in Kerala
Farook Umarul (Kerala), Sudharmini S (Kerala), Ramesh K (Kerala), Dileepkumar T (Kerala)

Ab_129: Vector control strategies and its impact on Aedes mosquito prevalence in the Chikungunya affected areas in Kerala
Sudharmini S (Kerala), Farook Umarul M (Kerala), Anuja U (Kerala), Anish T.S (Kerala)

Ab_162: Clinical profile of suspected pediatric cases of Chikungunya from Alapuzha
P.R. Sreelatha (Kerala), Girija Mohan (Kerala), Anas (Kerala)

16:30 to 17:30
Session 3 Panel Discussion on future plans for emerging and reemerging infections
Moderators - Jacob John and K R Thankappan
Panelists - *V Raman Kutty, Mathew Thomas, Rajesh Bhatia, V. Arankalle*

14:00 to 15:30 Parallel Sessions

HIV/STI - 1
Classroom 1
Chairperson: Prasanna Kumar

Ab_6: A study on social stigma and discrimination faced by HIV/AIDS patients in tertiary care setup
Lekshmy S P (Assam), T.G. Mahanta (Assam), A. Barua (Assam)

Ab_66: HIV surveillance lacks coverage of the rural population in the South 24 Parganas district of West Bengal
Shyamali Rudra (Tamil Nadu) Ramakrishnan (Tamil Nadu), M.D. Gupte (Tamil Nadu), Y. Hutin (Tamil Nadu)

Ab_88: Co relation of CD4+T cell count with serum zinc, copper and selenium in HIV positive individuals
Akthar Hussain (Delhi), Habib Hasan (Delhi), Amit Malviya (Delhi)

Ab_95: HIV care delivery-challenges for family members
Shilpa Karvande (Maharashtra), Vidula Purohit (Maharashtra), Sheela Rangan (Maharashtra), Karina Kielman (UK), John Porter (UK)

Ab_99: Access to ARVs-Bottlenecks in treating HIV/AIDS in high prevalence districts
Saju Joseph (Maharashtra), Swathi Patil (Maharashtra), Sheela Rangan (Maharashtra), Karina Kielman (UK), Kabir Shiekh (UK), John Porter (UK)

HIV/STI - 3
Classroom 2
Chairperson: Dr. K.V. Sreenivasan

Ab_18: Male circumcision as a prevention of HIV infection in sub-Sahara Africa
Gordon Nyabade (Kenya)

Ab_30: Awareness of HIV/AIDS and effect of intervention
Suresh Badhan (Delhi), Jai Pal Singh (Delhi), Panna Lal (Delhi), Usha Rani (Delhi), Neelam Verma (Delhi), Kalpana Kumari (Delhi)

Ab_32: A comparative study on quality of STI care in private Allopathic clinics-PSI /Avahan's key clinic franchise program in India
J. Joson Meloot (Tamil Nadu) Maharajan Muthu (Tamil Nadu)

Ab_106: Assessment of quality of care for STI treatment through simulated patient study following lot quality assurance sampling
Avinash Sadashivaiah (Delhi), Aseem Sharma (Delhi)

Ab_179: Demographic and biological correlates of herpes simplex virus type 2 infection among married women in India
Purnima Madhivanan (USA), Karl Krupp (Karnataka), Varalakshmi Chandrasekaran (Karnataka), Chitra Karat (Karnataka), Anjali Arun (Karnataka), Jeffrey D. Klausner (USA)

Tuberculosis
Classroom 3
Chairperson: Hemachandran

Ab_45: Need for revisiting RNTCP for policies, strategies and its implementation for MDR-TB in Mumbai
Arun Bamne (Maharashtra), Minni Khetarpal (Maharashtra), Jairaj Thanekar (Maharashtra)

Ab_55: Capacity building of DOTS providers to ensure safety of smoking TB patients
A S Pradeep Kumar (Kerala), C.U. Thresia (Kerala), K R Thankappan (Kerala), Mark Nichter (USA)

Ab_78: Knowledge and attitude towards DOTS among junior doctors in medical college hospital, Thiruvananthapuram
Anish T.S. (Kerala), Sanu Sain (Kerala) Saritha L (Kerala) Saritha K R (Kerala), Shajahan Rabu Mole (Kerala)

Ab_98: Operations research towards universal access to TB care- an example from Pimpri Chinchwad Municipal Corporation Maharashtra
Vinita Datye, (Maharashtra) Anagha Pradhan (Maharashtra), Sameer Pawar (Maharashtra), Madhuri Mankar (Maharashtra) Kishor Khilare (Maharashtra), John Porter (UK)

Ab_188: Urban TB control program of BRAC in Bangladesh- the challenges
Farhana Sultana (Bangladesh), Shahaduz Zaman (Bangladesh), Md. Akramul Islam (Bangladesh), Faruque Ahmed (Bangladesh)

Sexual & Reproductive Health- 2
Classroom 4
Chairperson: Dr. K. Navaneetham / Dr. M. Jayakumary

Ab_194: Alarming caesarian rates in rural area - results of a community based survey in Kerala, India
Biju Soman (Kerala)

Ab_109: Policy responses to reproductive and sexual health issues of adolescents in India
Shailaja Tetali (Sweden), Ashok Kumar (Delhi), J.P.Kapoor (Delhi)

Ab_158: Women's autonomy and contraceptive use in rural Dharmapuri, Tamil Nadu
Palinisamy Subramanian (Tamil Nadu), T.K. Sundari Ravindran (Kerala)

Ab_178: The epidemiology and correlates of Trichomonas vaginalis infection among married women in India _evidence against syndromic approach to diagnosis
Purnima Madhivanan(USA), Karl Krupp (Karnataka), Varalakshmi Chandrasekaran (Karnataka), Chitra Karat (Karnataka),Jeffrey D Klausner (USA) Arthur L Reingold (USA)

Ab_184: Sensitization workshop with the medical fraternity
Aslam Nayyer (Delhi)

Emerging & Re-emerging Infections- 1
Seminar Hall
Chairperson: Dr. K. Vijayakumar

Ab_89: Poor vaccine coverage continues to cause measles outbreak in Purulia District in West Bengal
Prasun Das (Tamil Nadu), R Ramakrishnan (Tamil Nadu), Yvan Hutin (Tamil Nadu), M D Gupte (Tamil Nadu), Asit Biswas (West Bengal)

Ab_137: Gross under-reporting by surveillance system hampers control of acute respiratory tract infections in under-5 children in south-24 Parganas in W. B
Sharmistha Mitra (Tamil Nadu), R. Ramakrishnan (Tamil Nadu), Shyamali Rudra (Tamil Nadu)

Ab_143: Dealing with an emerging disease in a resource poor setting -Orissa State, India
Madan Mohan Pradhan (Orissa) Ashis Das (Orissa)

Ab_155: Analysis of surveillance data of a district detects a rising trend of enteric fever-a finding relevant for local health managers, south 24 parganas, West Bengal
Dipankar Maji (Tamil Nadu), R. Ramkrishnan (Tamil Nadu), T.Sen (West Bengal), A.Brahma (West Bengal), S.Sarkar (West Bengal), S.Sharma (West Bengal)

Ab_169: Study on the prevalence and intensity of soil transmitted helminthes in MCD children
Sobhana Ranjan (Delhi), S.J. Passi (Delhi), S. N. Singh (Delhi)

15:30 to 16:00
Tea Break

16:00 to 17:30 Parallel Sessions

HIV/STI -2
Classroom 1
Chairperson: Yamini Thankachy

Ab_117: Nutritional assessment in HIV infected children
Sugam Bhatnagar (Maharashtra), Meenakshi Bhattacharya (Maharashtra)

Ab_145: An integrated model for HIV care - 5 year experience from central Kerala
Kidangazhiyathmana Ajithkumar (Kerala), Bobby Abraham (Kerala), Ramya (Kerala) M A Raveendran (Kerala)

Ab_198: Establishing health services for female sex workers in southern Maharashtra and northern Karnataka - prevention through participation
Mrunal Shetye (Maharashtra), Prashant Deshpande (Maharashtra), Vinoda Bavdekar (Maharashtra), Pankajvinayak Sharma (Maharashtra), Brian Gilligan (Maharashtra), Reynold Washington (Karnataka)

Ab_204: Missing targets in HIV/AIDS control - a qualitative study in a district of Tamilnadu
Asirvatham Edwin Sam (Kerala)

Ab_221: Delivering HIV prevention services to truckers - strategies, challenges and outcome
Bhalchandra Kinikar (Maharashtra), Mrunal Shetye (Maharashtra)

Malaria
Classroom 2
Chairperson: Dr. Aysha Beegom

Ab_42: Re-emergence of malaria and innovative comprehensive revamping strategies to combat the same in urban settings of Mumbai
Minni Khetarpal (Maharashtra), Arun Bamne (Maharashtra), Kishor Hargoli (Maharashtra)

Ab_103: Integrated Disease Surveillance Project
Amar Shah (Kerala), K.R. Thankappan (Kerala)

Ab_132: Factors affecting prompt treatment of malaria in a high endemic district of Orissa
Ashis Das (Orissa), T.K.S. Ravindran (Kerala), Madan Pradhan (Orissa)

Ab_229: Climatic factors and increasing malaria transmission in Kurseong, Darjeeling District, West Bengal
Sharma Puran K (Tamil Nadu), Ramakrishnan R (Tamil Nadu), Hutin Y (Tamil Nadu), M D Gupte (Tamil Nadu)

Ab_230: Lack of access to public health care, shift towards unqualified private providers & malaria deaths-Alipurduar, Jalpaiguri District, West Bengal
Sharma Puran K (Tamil Nadu), Ramakrishnan R (Tamil Nadu), M D Gupte (Tamil Nadu), Sen T K (West Bengal) Hutin Y (Tamil Nadu)

Sexual & Reproductive Health - 1
Classroom 3
Chairperson: Dr. Nirmala Sudhakaran

Ab_49: Investing in Women's health- need for education
Pratibha Singh (Assam)

Ab_57: Hysterectomy leading to early age at menopause- a neglected issue in reproductive health care from a gender perspective
Yelavarrthi R Padma (Andhra Pradesh)

Ab_60: Factors influencing the health seeking behavior of people with gender identity disorder - a community based descriptive study
Prasanna Samuel (Tamil Nadu), Ravikar Ralph (Tamil Nadu)

Ab_93: Sexual abuse among children in India - a comparative analysis
Anil Chandran (Delhi), UV Somayajulu (Delhi), Tilak Mukherji

Ab_176: Sexual and reproductive health seeking behaviors of women in rural and peri-urban areas of Mysore, India
Varalakshmi C (Karnataka), K Krupp (Karnataka), C Karat (Karnataka), A Arun (Karnataka), P Madhivanan (USA)

Sexual & Reproductive Health- 3
Classroom 4
Chairperson: Dr. Asha Raghavan

Ab_191: Sexual and reproductive health concerns and available services in Chakaria, Bangaladesh
Ilias Mahmud (Bangaladesh), Sabina Rashid (Bangaladesh), Mushtaque Chowdhury (Bangaladesh), Nabil Ahmed (Bangaladesh)

Ab_192: Prevalence of anemia among adolescent girls in rural Kerala
Mr. Arun Basil Mathew (Kerala), Sajith J S (Kerala), Ajayan K (Kerala), Soman C R (Kerala), Vijayakumar K (Kerala)

Ab_200: Role of social and demographic factors in declining child sex ratio in an urban locality in East Delhi
Sonali Meena (Delhi), Sanjiv Bhasin (Delhi), Narinder Saini (Delhi)

Ab_203: Level & correlates of maternal morbidity in women of age group 15-49 years in urban slum in Kolkata
Maitraye Basu (Kerala)

Ab_217: Alternate choices for predicting post natal care use in maternal health programmes
Meena Daivadanam (Kerala)

Ab_112: Poverty and deprivation-forgotten determinants of reproductive health
Aarti Kelkar Khambete (Kerala)

Emerging & re-emerging Infections - 2
Seminar Hall
Chairperson: A. Sreenivas

Ab_232: Poor knowledge of health workers is an obstacle to leprosy deformation prevention, south-24 Parganas district West Bengal
Shyamali Rudra (Tamil Nadu), Ramakrishnan R (Tamil Nadu), Gupte MD (Tamil Nadu), Hutin Y (Tamil Nadu), Sanyal H (West Bengal)

Ab_233: A cholera outbreak in a village of West Bengal India, 2006 - the danger of using ponds for soiled clothes disposal
Shyamali Rudra (Tamil Nadu), Ramakrishnan R (Tamil Nadu), Gupte MD (Tamil Nadu), Hutin Y (Tamil Nadu)

Ab_236: Poor data transmission limited outbreak detection in urban areas of north-24 Parganas district, India 2006-07
Rama Bhunia (Tamil Nadu) Ramakrishnan R (Tamil Nadu), Gupte MD (Tamil Nadu), Hutin Y (Tamil Nadu), Sen TK (West Bengal)

Ab_237: Cutaneous anthrax outbreak in a village West Bengal, India 2007: the danger of unsafe handling of infected cow meat
Tapas Kumar Ray (Tamil Nadu), Murhekar M.V. (Tamil Nadu), Gupte M.D. (Tamil Nadu)

Ab_238: An outbreak of Rubella in a hilly district of Chamba, Himachal Pradesh
Surender Nikhil Gupta (Tamil Nadu) Ramachandran V (Tamil Nadu), Sundaramoorthy L (Tamil Nadu), Gupte M.D. (Tamil Nadu), Naveen Gupta (Himachal Pradesh)

JANUARY 12, 2008, SATURDAY

PLENARY SESSION III - NEGLECTED EPIDEMIC OF CHRONIC DISEASES

Auditorium : 9:00 to 11:00

Moderators : Jerzy Leowski, NCD Advisor WHO SEARO

9:00 to 9:30
Growing burden of NCDS in the South East Asia Region
Jerzy Leowski
NCD Advisor, WHO SEARO, Delhi

9:30 to 10:00
Responding to the Threat of Chronic Diseases in India.
K Srinath Reddy
President, Public Health Foundation of India

10:00 to 10:30
Gender and Mental Health in India.
Vikram Patel
Sangath, Goa & Professor, London School of Hygiene and Tropical Medicine

10:30 to 11:00
Tea Break

PLENARY SESSION IV - TOBACCO CONTROL IN INDIA

Auditorium : 11:00 to 13:00

Moderators : M Krishnan Nair, Former Director, Regional Cancer Centre, Trivandrum
Paula Palmer, University of Southern California, USA

11:00 to 11:30
Global burden of Tobacco.
Harry A Lando
Professor of Epidemiology, University of Minnesota

11:30 to 12:00
Tobacco as a Major Epidemic in India.
Prakash C Gupta
Healis Sekhsaria Institute of Public Health, Navi Mumbai

12:00 to 12:30
Major Findings of Quit Tobacco India Project I (2002-2007).
K R Thankappan
Professor and Head, Achutha Menon Centre for Health Science Studies, SCTIMST

12:30 to 13.00
Quit Tobacco India Project II (2008-2013).
Mark Nichter
Professor of Medical Anthropology, University of Arizona, USA

13:00 to 14:00
Lunch Break

Poster Exhibition (See Page 27)

14:00 to 15:30 - Parallel Sessions

Tobacco
Auditorium
Chairperson : Jeesha C Haran

Ab_31: Addressing tobacco control -Dentist's knowledge, attitudes and behavior in Cochin, India
C. Janakiram (Kerala) Madhu Unnikrishnan (Kerala), Manjunath B C (Kerala)

Ab_46: Validation of self reported smoking by serum cotinine level measurements - an Indian perspective
Panniyammakal Jeemon (Delhi), Agarwal S (Delhi), Lakshmy R, (Delhi), Vivek C (Delhi), Reddy K S (Delhi), Ruby G (Delhi)

Ab_47: Smoking among Diabetes patients and need for intervention-observations from a study in Kerala
Thresia C.U. (Kerala), Thankappan K. R. (Kerala), Pradeep Kumar A.S (Kerala), Sailesh Mohan (Kerala), Mark Nichter (USA), Harry A Lando(USA)

Ab_61: Low birth weight and maternal smokeless tobacco use - a hospital based case control study
Nunui Lalnuntlangi (Kerala), K.R. Thankappan (Kerala)

Ab_212: Tobacco use, quit behavior and reported physician intervention among patients in Palakkad, Kerala
A. S. Pradeepkumar (Kerala), K.R. Thankappan (Kerala)

Cancer - 1
Class room I
Chairperson: Manju Renjit Darwin

Ab_33: Pap smear findings among pre/post menopausal women attending maternal hospital
Kalavathy Mathurchennath (Kerala), Deepa Sankar (Kerala), Aysha Beegum (Kerala)

Ab_35: Oral cancer awareness in high risk population in India
Kalavathy Elango (Kerala), Sherry Peter (Kerala), Moni A. Kuriakose (Kerala), K.R.Sundaram (Kerala), P.Gangadharan (Kerala) Civy Pulayath (Kerala)

Ab_105: Cancer control-leads from cancer registry data
Gangadharan P (Kerala), A. Nandakumar (Karnataka)

Ab_113: Case control study of physical activity and anthropometric factors and breast cancer in South India
Aleyamma Mathew (Kerala), B Rajan (Kerala), Beela Sarah Mathew (Kerala), V Gajalakshmi (Tamil Nadu) Paul Brennan (France), Paolo Boffetta (France)

Ab_130: Quality of life assessment in breast cancer patients undergoing mastectomy compared to breast conservation treatment
Antony Lawrence K A (Kerala), Manju A.S (Kerala), Radha M S (Kerala), Anoop A (Kerala), Dinesh M (Kerala), Padmanabhan T.K (Kerala)

Cardiovascular diseases and Hypertension - 1
Classroom 2
Chairperson: C.C. Kartha

Ab_21: Study of prevalence, awareness, treatment and control of hypertension in an urban community in Mangalore
Jagdish Chataüt (Karnataka), B.S. Sajjan (Karnataka), Mangalore Shashidhar Kotian (Karnataka)

Ab_193: Distribution of blood pressure in girls aged 10 -19 years in rural Kerala
Sajith J S (Kerala), Arun Basil Mathew (Kerala), Ajayan K (Kerala), Soman CR (Kerala), Vijayakumar K (Kerala)

Ab_19: Study of CVD risk factors in young adults and its relation to birth weight
Jayakrishnan T (Kerala), Jeeja M C (Kerala)

Ab_41: Demographic risk factors of some NCDs among elderly in India
Mini G.K. (Kerala)

Ab_54: Prevalence of ROSE questionnaire, angina, risk factors of CAD & resources available for management
Shiny C Alex (Uttar Pradesh), Saxena P C (Uttar Pradesh), Singh Nahar (Uttar Pradesh)

Mental Health - 1
Classroom 3
Chairperson: Dr. M. Jayakumary / Dr. K.S. Shaji

Ab_28: Substance abuse among street children in Delhi
Arun Kumar Sharma (Delhi), Vishal Sharma (Delhi), Amit Jindal (Delhi), Sonali Meena (Delhi)

Ab_133: Emerging trends and factors associated with depression in Kerala
Indu P. Satyadas (Kerala), Leela Ittyamma K R (Kerala), Anilkumar TV (Kerala), Raju D (Kerala), Ramdas Pisharody (Kerala), Paul Russel (Tamil Nadu)

Ab_70: Mental health morbidity among PLWHA in the state of West Bengal
Arup Chakrabartty (West Bengal), Suman Chakraborty (West Bengal), Anjana Nayek (West Bengal), Samrat Basu (West Bengal), Banhisikha Bhattacharya (West Bengal)

Ab_182: Psychiatric morbidity in elderly population attending psycho-geriatric clinic in a tertiary care centre-a retrospective study
Indu P V (Kerala), Subha Nanoo (Kerala), Raju Damodaran (Kerala)

Ab_38: Psychiatric morbidity pattern and socio demography of geriatric patients in tertiary care teaching hospital
Sabu K.M. (Karnataka)

Environment and Occupational Health
Classroom 4
Chairperson: Dr. T.K. Joshi

Ab_94: Assessment of personal hygiene of poultry butchers in Patna City
Rajesh Kumar (Kerala), Biju Soman (Kerala)

Ab_96: Alcohol use as a major predictor of sickness absenteeism among industrial workers in Karnataka
Manjunatha R (Kerala), K R Thankappan (Kerala)

Ab_160: Health profile of adolescent rural female using biomass fuel
Vipin Bihari (Uttar Pradesh), Kesavachandran C (Uttar Pradesh), Mathur N (Uttar Pradesh)

15:30 to 16:00
Tea Break

16:00 to 17:30 - Parallel Sessions

Diabetes & Unhealthy Diet
Auditorium
Chairperson: V. Mohanan Nair

Ab_58: Nutrition and health transition lessons from Kerala
Gangadharan Kadangot (Kerala)

Ab_135: Unhealthy dietary behavior among adolescents students in South Delhi
Rahul Sharma (Delhi) V L Grover (Delhi), S Chaturvedi (Delhi)

Ab_74: Reversing social gradients in the prevalence of diabetes mellitus in urban India
Vamadevan S Ajay (Delhi),Anuradha Tripathi (Delhi), Lekshmi Ramakrishnan (Delhi), K R Thankappan(Kerala), Dorairaj Prabhakaran (Delhi), Kolli Srinath Reddy (Delhi)

Ab_79: A study on the risk factors of diabetic retinopathy and possible relationship with viral fever
Sriram Venkataraman (Kerala), Nijas Ahammed (Kerala), Neethu Sukumar (Kerala)

Ab_114: Prevalence of Type II Diabetes Mellitus and predictors of hyperglycemia in central rural Kerala, India
Vijayakumar G (Kerala), Kutty V R (Kerala), Arun R (Kerala)

Cancer - 2
Classroom - 2
Chairperson: Anil C.Mathew

Ab_157: Project spice screening programme in Idukki district for oral cancer eradication-results of a pilot survey
Jacob Kuruvilla (Kerala), Varghese Mani (Kerala), Jayan Jacob Mathew (Kerala)

Ab_183: Risk factors of ovarian cancer
Muhammed Jasim (Kerala), Mohammed Shafi (Kerala), Megha Bharath (Kerala), Muhammed.J.Nishad (Kerala)

Ab_189: Role of screening in oral cancer mortality - evidence from a cluster randomized controlled trial
Gigi Thomas (Kerala), Ramadas Kunnumbath (Kerala), Thara Somanathan (Kerala), Sankaranarayanan Rengaswamy (Kerala), Babu Mathew (Kerala)

Ab_196: High natural radiation and cancer in Karunagapally
Jayalekshmi P (Kerala), Reghu Ram Nair (Kerala), B. Rajan (Kerala)

Ab_163: Tobacco dependence among distinct tribal population in Kerala
Jayakrishnan R (Kerala), Sreekumar.C (Kerala), Sankara Sarma.P (Kerala)

Cardiovascular diseases and Hypertension - 2
Classroom 2
Chairperson: S.Sivasankaran

Ab_71: Blood Pressure and BMI among elderly in rural Allahabad-cross sectional study
Naveen K H ((Uttar Pradesh), S. Bali (Uttar Pradesh), M. A. Hassan (Uttar Pradesh), S. Dwivedi (Uttar Pradesh)

Ab_208: Cardio-vascular risk factors distribution and its co-relation in adolescents
Manu Raj (Kerala), Mary Paul (Kerala), Krishnakumar R (Kerala), Sundaram K R (Kerala)

Ab_214: Risk of CVD among south Asians in New Zealand and health promotion models for interventions
M. Ekramul Hoque (New Zealand), Samson Tse (New Zealand)

Ab_202: Changing trends in smoking among men in Kumarakom -results from a community based intervention program
Meena Daivadanam (Kerala), K. R. Thankappan (Kerala), S. Sivasankaran (Kerala)

Ab_168: Lifestyle modification based on yoga in the prevention of chronic degenerative disorders
Sobhana Ranjan (Delhi), S.J. Passi (Delhi), R.L. Bijlani (Delhi)

Mental Health - 2
Classroom 3
Chairperson: K.A. Kumar

Ab_52: Prevalence and correlates of depressive symptoms of inmates of old age homes Kottayam district
Arun R (Kerala), Kutty VR (Kerala), Ravindran S (Kerala)

Ab_141: How adolescents view their para suicide
Prasanth Subrahmanian (Kerala), Sankara Sarma (Kerala)

Ab_20: Attachment &social trauma of young survivors of Gujarat earthquake &riots
Manasi Kumar (UK)

Ab_51: A cross cultural review of the ethical issues in the management of persons with dementia in Kerala
Sowmini Cheruvara Vadakkathil (Kerala), Raymond De Vries (USA)

Ab_228: Suicide as a public health emergency in youth in India-need for a co-ordinated response.
Anant Bhan (Maharashtra)

Intentional and Unintentional injuries
Seminar hall
Chairperson: Girish Menon

Ab_116: Health education as an approach for injury prevention
Shailaja Tetali (Sweden)

Ab_161: The pattern of disabilities in Thiruvananthapuram district
Reshmi Ramachandran (Kerala), Sreekala K.N. (Kerala), Anish T. S (Kerala), Sunil A. Salim (Kerala)

Ab_205: Determinants, pattern of road traffic accidents in Kerala
Godwin S K (Kerala)

Ab_206: Falls at home among preschool children - a hospital based study in Trivandrum
Rekha M. Ravindran (Kerala), Raman Kutty V (Kerala), Hema R (Kerala)

Ab_225: Exploring the perception of guardians about child drowning in rural Bangladesh
Shamim Ahmed (Bangladesh)

19:00 Seminar at Mascot Hotel

Invited Lecture

Gender as a social determinant of health
Gita Sen
Indian Institute of Management Bangalore

JANUARY 13, 2008, SUNDAY

PLENARY SESSION V - HEALTH SYSTEMS

Auditorium : 9:00 to 11:00

Moderators : N Krishnaji, National Fellow ICSSR; Centre for Economic and Social Studies, Hyderabad
CAK Yesudian, Dean, Research and Development, Tata Institute of Social Sciences Mumbai

9:00 to 9:30
Financing Health Care in India - Current Situation and Future Options.
Peter Berman, World Bank New Delhi

9:30 to 10:00
Equity in an Age of Developing Health Care Markets (with special focus on Gender)
Muraleedaran VR
Indian Institute of Technology, Chennai

10:00 to 10:30
Regulation of Health Care - Options for the State
Rama V Baru
Centre for Social Medicine, Jawaharlal Nehru University, New Delhi

10:30 to 11:00
Kerala Health System: Crisis and Response
V Raman Kutty (Kerala)
Professor, Achutha Menon Centre for Health Science Studies, SCTIMST

11:00 to 11:30
Tea Break

PLENARY SESSION VI - HUMAN RESOURCES FOR PUBLIC HEALTH

Auditorium : 11:30 to 12:30

Moderators : CS Pandav, Professor and Head, Centre for Community Medicine, AIIMS, New Delhi
MD Gupte, Director, National institute of Epidemiology, Chennai

11:30 to 12:00
Human Resources for Health in India- challenges ahead
B. Ekbal, Former Vice Chancellor, University of Kerala

12:00 to 12:30
Professional Training in Public Health- Undergraduate and Post-Graduate Level
Ravi Narayan, Community Health Advisor Society for Community Health Awareness, Research & Action, Bangalore

12:30 to 13:30
Lunch Break

Poster Exhibition (See Page 28)

13:30 to 15:00 - Parallel Sessions

Health Financing
Classroom 1
Chairperson: Ravi Duggal

Ab_151: How public goods and big time items within public health interact to optimize resource use
Alistair Fischer (UK)

Ab_164: Assessing fairness in financing out patient care in India-revisiting WHO's FFC framework
William Joe (Kerala), Udaya S Mishra (Kerala), K Navaneetham (Kerala)

Ab_186: Maternal Health financing in Gujarat-preliminary results from a household survey of beneficiaries under the Chiranjeevi scheme
Ramesh Bhat (Gujarat) Dileep V. Mavalankar (Gujarat), Mr. Prabal V Singh (Gujarat), Neelu Singh (Gujarat)

Ab_102: Enhancing access to PPTCT services at primary health center level- an experience from Andhra Pradesh
Lincoln Choudury (Andhra Pradesh), Sebastian Ousepparampil (Andhra Pradesh), Sukumar (Andhra Pradesh), Akshya Mishra (Andhra Pradesh), Asok Kumar (Andhra Pradesh), Sudhir Bunga (Tamil Nadu)

Equity in health
Classroom 2
Chairperson: Joy Elamon

Ab_7: Equity issues under user fees in Madhya Pradesh
Sumit Shrimali (Mauritius)

Ab_39: Women's Health Policy in India-Choices and Practice
Ramila Bisht (Maharashtra)

Ab_100: Income, income inequality and health in India
Aarushi Bhatnagar (Delhi)

Ab_111: Disparity in health - a case study in Chirakkara panchayath
Anitha V (Kerala)

Ab_165: On examining health inequities in Arab countries
William Joe (Kerala), Udaya S Mishra (Kerala)

Regulation in Health Care
Classroom 3
Chairperson: M.A. Oommen

Ab_64: By papers and pens, you can only do so much: views about accountability from government district health administrators & workers
Asha George (Kerala)

Ab_11: Drivers of technology adoption- a case of the for-profit hospitals in Kerala
Rony Thomas Rajan (Kerala)

Ab_56: Successes and challenges in achieving quality STI services through private sector franchise
Manish Ranjan (Delhi), R. Pasricha (Delhi)

Ab_124: Situational analysis of health human resources in public health care facilities in Orissa
Saji Saraswathy (Orissa), Ashis Das (Orissa), Thiagarajan Sundararaman (Delhi)

Ab_65: Unfree rural health care markets: RMP views from Koppal district, Karnataka
Asha George (Kerala)

Health System Reforms
Classroom 4
Chairperson: Rajeev Sadanandan

Ab_81: Towards better maternal and child health in India- the role of human resources
Krishna D Rao (Delhi), Aarushi Bhatnagar (Delhi), Shomikho Raha (Delhi)

Ab_90: Assessing the State capacity for operationalising first referral Unit for EmOC Services : Gujarat
Parvathy Sankararaman (Gujarat), Dileep V Mavalankar (Gujarat), Bharati Sharma (Gujarat), Mudita Upadhaya (Gujarat)

Ab_219: Medical Tourism in Kerala - implications on cost of care
Divya Bhagianadh (Kerala), Sheethal Joy (Kerala)

Ab_210: Comparing Indian health policy -responses to poverty in the pre and post liberalized regime
Anu S Nair (Kerala)

Ab_53: Alternate medical practitioners for rural India -Advantages, Challenges and issues
Joe Varghese (Kerala), Roy Narayana Das (Kerala)

Public Health Education
Seminar hall
Chairperson: N. Devadasan

Ab_44 Blood Safety - a public health perspective
Usha Kandaswamy (Kerala), Jaisy Mathai (Kerala)

Ab_101: Pacific Rim Global health framework - an interdisciplinary approach to health promotion amid rapid cultural, social and environmental change
Paula H Palmer (US), C. A. Johnson (US), K.R. Thankappan (Kerala), M.D. Gupte (Tamil Nadu), S.A. Bhuiyan (Bangladesh), C. Phitaya (Thailand)

Ab_120: Health research in India-preparedness gaps and needs
Sivan Y.S (Tamil Nadu)

Ab_134: Public health resource network-capacity building in public health through distance learning program in India
Ashis Das (Orissa)

Ab_220: Knowledge of risk of transmission of infectious diseases among dentists in Trivandrum
Simy Mathew (Kerala), P.Sankara Sarma (Kerala)

15:00 to 15.30
Tea Break

15:30 to 16:30 Valedictory Function

POSTER EXHIBITION - JANUARY 11, 2008

Ab_29:Role of mass media in dissemination of HIV awareness among urban housewives
Arun Kumar Sharma (Delhi), Rahul Sharma (Delhi), A T Kannan (Delhi)

Ab_36: Risk factors for human leptospirosis in North Kerala
Asma Rahim (Kerala), Thomas Bina (Kerala), Bindhu Vasudevan (Kerala)

Ab_40: Newer strategy for diagnosing pulmonary TB - case control study
Venugopal K. (Kerala), Nisha R.S (Kerala), Sreelatha P.R (Kerala)

Ab_50: End malaria-dream or reality? An insight into local beliefs and perceptions
Pratibha Singh (Assam)

Ab_62: Risk factor analysis for occurrence of stillbirths in twin pregnancies - a retrospective study
Prasanna Samuel (Tamil Nadu) B. Antonisamy (Tamil Nadu), Mathews Mathai (Tamil Nadu)

Ab_72: Effectiveness of ToT training strategies for improving level of awareness among work-place employees
Srihari J.S. (Karnataka), Chakrabartty Arupkumar (West Bengal), Chakraborty Suman (West Bengal), Nayek Anjana (West Bengal), Mukherjee Devlina (West Bengal)

Ab_73: Control of Chikungunya epidemic in Kunnathukkal Panchayath - a report of interventions by students of Dr. Somervell Memorial CSI Medical College, Karakonam
Regi Jose (Kerala), Jeesha C Haran (Kerala), Jessil Abraham (Kerala), Bibin Paul (Kerala)

Ab_83: Adverse effects following immunization with Japanese encephalitis vaccine (SA14-14-2) among children
Ranganath B.G. (Karnataka), Hiremath.S.G (Karnataka)

Ab_131: Challenges in community management of an epidemic, an experience from Kerala
Tony Lawrence (Kerala), Ajay Rajan (Kerala), Anish T.S (Kerala)

Ab_139: Treatment outcomes of patients under RNTCP DOTS in Kollam District, Kerala
Shibu Vijayan (Kerala)

Ab_170: Sexual and reproductive health issues of rural women in Baroda district, Gujarat.
Neelu Singh (Gujarat)

Ab_175: Novel retention strategies for young women participating in reproductive health research in India
Varalakshmi C (Karnataka), K Krupp (Karnataka), C Karat (Karnataka), J Klausner (USA), A Reingold (USA), P Madhivanan (USA)

Ab_197: Empowerment of young people against HIV/AIDS
Tej Ram Jat (Rajasthan)

Ab_240: Role of IMA in the public-private mix initiatives of the RNTCP, India
S.S. Lal (Delhi), K. Hemachandran (Kerala), R.V. Asokan (Kerala)

POSTER EXHIBITION - JANUARY 12, 2008

Ab_12: Health effects of yoga and walking on BMI and body fat percentage
C.Kesavachandran (Uttar Pradesh), V Bihari (Uttar Pradesh), N Mathur (Uttar Pradesh)

Ab_13: Hidden psychiatric morbidities & general health status among MSM and other clients of a STD clinic
Soumya Deb (West Bengal), Aparajita Dasgupta (West Bengal), Ranadeb Biswas (West Bengal)

Ab_15: Psychosocial problems of mastectomied women for carcinoma breast
Niju M L (Kerala), A.V.Purushothaman (Kerala)

Ab_24: Prevalence of Type II diabetes mellitus in a rural population of North Kerala
Deepa D.Y. (Kerala),Jayakumary M (Kerala) , Jayadevan S (Kerala)

Ab_25: Prevalence of childhood obesity among school children
Pradeesh CB (Kerala), Jayakumary M (Kerala), Jayadevan S (Kerala), Binoo D (Kerala)

Ab_43: Knowledge & practice regarding waste management among school children in North Kerala
Narayanan PV (Kerala), Usha Karunakaran (Kerala)

Ab_48: High use rates of Tobacco among adolescents in rural areas of Uttarakhand
Pankaj Kumar Jain (Tamil Nadu), V. Ramachandran (Tamil Nadu), M. Murhekar (Tamil Nadu), M.D.Gupte (Tamil Nadu)

Ab_69: Prevalence and factors associated with oral ill health in a young south Indian population: a cross sectional study
Aneesh T George (Tamil Nadu)

Ab_123: Bio dental waste management-issues, concerns and challenges
Joe Joseph (Rajasthan), B.S.Nandakumar (Karnataka), Vidyaa Hari Iyer (Tamil Nadu), Ajith Krishnan C.G (Gujarat)

Ab_185: Effect of smoking on BMI on adults in Delhi - a population based study
Pragti Chhabra (Delhi) Sunil Kumar Chhabra (Delhi)

Ab_218: Work stress- a cross sectional study among software professionals in Kerala Technopark
Sheethal Joy (Kerala)

Ab_125: Delaying effects of women's education on their age at marriage and pregnancy
Nandita Bhan (Delhi), Rajat Mukherjee (Delhi)

Ab_142: Impact of a specially designed intervention for promoting dual protection of condoms for newly married women in the re-settlement colony of N E Delhi
Samiksha Singh (Delhi), Sanjay Chaturvedi (Delhi), Amod Kumar (Delhi), A.T. Kannan (Delhi)

Ab_222: A report on the indications for admission for inborn nursery and neonatal ICU - SAT hospital in the year 2006
Syam N (Kerala)

POSTER EXHIBITION - JANUARY 13, 2008

Ab_14 Poverty and health in rural WB - catastrophic household expenditure for healthcare
Sumit Mazumdar (Maharashtra), M. Guruswamy (Maharashtra)

Ab_75: Functionality of sub centers in Mandla district of MP- situational analysis
Madhu Upadhyay (Delhi)

Ab_82: Technology Acceptance Model (TAM) to ascertain the affective factors for operationalising electronic data records for primary health care for rural India
Chandil Gunasekhara (Karnataka), Nandakumar Bidare (Karnataka), Gopinath D (Karnataka), Vijay Singh (Karnataka)

Ab_104: Advocacy and development of partnerships towards a health promotion policy for urban poor in Bangalore City Corporation
Harikiran Arkalgud G. (Karnataka), P.R. Ramesh (Karnataka), Sreenivasan Velu (Karnataka), K S Nagesh (Karnataka)

Ab_110: Impact of health expenditure on house- hold consumption patterns in South India
Dilip T.R (Kerala)

Ab_115: Role of tele health in reforming Kerala's health system- exploring & extrapolating from the experiences of a nodal officer
M K Nabeel (Kerala)

Ab_119: Knowledge, attitudes and practice of health care ethics and law among dental graduates at R V dental college Bangalore
Kirankumar Dhanappa (Karnataka), A.G. Harikiran (Karnataka)

Ab_144: The impact of governance on health outcomes in India
Indrani Saran (Delhi), Krishna Dipankar Rao (Delhi)

Ab_152: The utilization of health care services in India -what determines the choice of the health care provider
Soumitra Ghosh (Maharashtra)

Ab_177: Public private partnerships- an emerging issue in public health reforms
Prabal V Singh (Gujarat)

Ab_199: Pattern of morbidity prevalence and health care utilization among elderly - a comparative study of Maharashtra & UP
Gopal Agarwal (Maharashtra), P. Arokiasamy (Maharashtra)

Ab_187: How many health workers, Who are they and where are they - using multiple sources of information to estimate the health workforce in India
Krishna D Rao (Delhi), Aarushi Bhatnagar (Delhi), Puja Thakker (Delhi), Indrani Saran (Delhi), Shomikho Raha (Delhi)

Ab_211: Global and regional migration of Indian health force
Anu S Nair (Kerala)

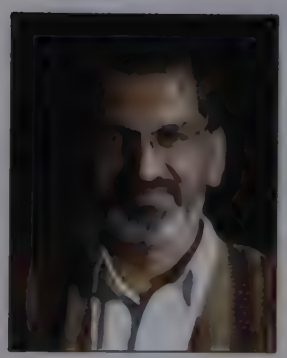
Ab_215: Awareness of services rendered by PHC and its perceived quality
Manjusha Warrier (Kerala)

Ab_216: Differential patterns in utilization & cost of health services in India
Arun Bahuleyan (Kerala)

ABSTRACTS- PLENARY SPEAKERS

RMC CON 08 | 32

Professor T.N. Krishnan Memorial Oration



RESEARCH WITH THE PEOPLE

Abhay Bang

Director, SEARCH (Society for Education, Action and Research in Community Health), Gadchiroli, Maharashtra

Knowledge is power and research is the powerhouse. Research is usually understood as an intellectual inquiry initiated and conducted by a professional researcher. Dr. Bang shall share the 21 years experience of community health action and research at the grassroots in Gadchiroli, Maharashtra. Based on that he shall propose a framework of research with the people.

Current Status of HIV/AIDS in India and Control Plans

K. Sujatha Rao
Additional Secretary, Ministry of Health & family Welfare, Government of India and Director General, National AIDS Control Organization

The year 2006 has given more realistic estimates of HIV/AIDS in India due to improved sentinel surveillance and population based estimates under National Family Health Survey-III. Based on the revised national estimates, the adult HIV Prevalence is estimated to be 0.36% (0.27% – 0.47%). Estimated HIV Prevalence is greater among males (0.43%) than among females (0.29%). Estimated adult HIV Prevalence is greater than 1% in Manipur (1.67%), Nagaland (1.26%) and Andhra Pradesh (1.05%). Karnataka, Maharashtra and Tamil Nadu have shown decline in adult prevalence (less than 1%). The total number of People Living with HIV/AIDS (PLHA) in the country is estimated to be 2.47 million (2.0-3.1 million).

The above results indicate that our strategy to focus on prevention of HIV infection has worked to some extent. At the same time, access to treatment of eligible PLHA with anti-retroviral drugs has made HIV/AIDS a chronic manageable disease. The National AIDS Control Programme was thus formulated to consolidate gains and further make efforts to reverse the trend of the epidemic during the 11th Plan (2007-12). This US$ 2.5 billion programme aims at saturating high risk groups infected with or vulnerable to HIV, identifying infected individuals through voluntary counseling and testing, providing care, support and treatment to PLHA, preventing transmission from mother to new born babies, provision of safe blood for transfusion, treatment of sexually transmitted infections and public awareness on prevention of HIV infection. Funds required for various interventions have been mobilized from various international funding agencies and Government of India. Operational guidelines for various interventions have been formulated. Human resource and their training is being given due importance to deliver effective services. Decentralized management coupled with strong monitoring and evaluation system has been put in place. It is expected that all stakeholders will join hands to control the HIV epidemic in India.

Revised National Tb Control Programme - Challenges Ahead

Paranji Ramalyengar Narayanan
Tuberculosis Research Centre, Chennai

RNTCP is an application in India of the WHO recommended Directly Observed Treatment Short Course (DOTS) strategy to control TB with the objective of curing at least 85% of new smear positive TB patients and detecting at-least 70% of such patients. Following a stringent preparatory appraisal mechanism, all districts started implementing RNTCP a in phased manner and the total population of India was covered under RNTCP in March, 2006. Since inception more than 7.9 million patients have been initiated on treatment and with the treatment success rate of more than 85% among new TB cases and 70% among re-treatment cases, the programme can be termed as highly successful in achieving its objectives. The programme has been internationally recognized for the fastest expansion in the history of DOTS implementation and adopting innovative methods of programme management especially with respect to monitoring, supervision, evaluation, involvement of other sectors such as NGOs, PPs and medical colleges. As the programme strives to achieve the millennium development goals related to TB it is faced with several challenges. The challenges are to consolidate and sustain the achievements, address regional, state and district variations in programme

performance, expanding the services for TB-HIV collaborative activities as outlined in the Joint National Framework to the whole country, scale up services for management of MDR-TB, prevent emergence of XDR-TB by promoting standardized treatment practices based on international guidelines for TB treatment both public & more so in the private sector, involve all health care providers by addressing conflicting interests and empower communities and people with TB making them demand for quality TB services. Major challenge for TB control in the long term is supporting appropriate research towards development of newer diagnostics, drugs and vaccines.

Current Status Of Malaria In India And Future Plans

K. Vijayakumar Professor
Department of Community Medicine,
Government Medical College, Trivandrum

Emerging Infectious Diseases In Kerala

T Jacob John
Former Professor CMC Vellore, Tamil Nadu

Since Kerala has achieved India's lowest birth rate, infant mortality rate and highest life expectancy, the general perception is that infectious diseases (IDs) have been effectively controlled. Indeed many childhood IDs with high mortality have been controlled with high routine immunization coverage, informed child rearing practices and need-based health-care-seeking behaviour. However, many IDs (with low mortality rates, partly due to access to health care) are highly prevalent in Kerala. Against this backdrop, Kerala has had a series of epidemics of IDs during the past 3 decades.

The epidemic diseases are broadly two kinds - previously endemic IDs causing outbreaks and newly emerging IDs. The recently emerged IDs of Kerala include Leptospirosis, Dengue fever and Dengue Haemorrhagic fever, Japanese encephalitis and Chikungunya fever. This picture is indicative of the vulnerability of the state for localized outbreaks and state-wide epidemics. However, what is intriguing is the lack of professional response to IDs, endemic and epidemic. It appears that high literacy by itself does not inculcate an intolerance of preventable IDs, which is the basic mindset upon which the state must build effective public health interventions.

Human Resources For Comprehensive Emoc: An Innovative Partnership With The Private Sector Obstetricians To Provide Skilled Care At Birth To The Poor In India

Amarjit Singh
Principal Secretary (Family Welfare) & Commissioner,
Government of Gujarat

Background: India has the world's largest number of maternal deaths. The past efforts to provide EmOC in rural areas have not succeeded because obstetricians are not willing to be posted in government hospitals at sub-district level. Thus there is a great shortage of skilled human resources to provide comprehensive EmOC in rural areas.

Methods: We have documented an innovative public-private partnership scheme - chiranjeevi - with the private obstetricians practicing in rural areas to provide delivery care to the poor. This is a descriptive analysis of this scheme along with analysis of the secondary data .We have estimated the lives of the mothers and new-born saved due to the scheme using available data.

Results: The analysis shows that more than 800 obstetricians have joined the scheme and more than 100,000 poor women have delivered in private facilities. We estimate that the coverage of deliveries among poor women under the scheme has increased from 27% to 48% between April and September 2007. The data also shows that there is substantial decline in maternal deaths and new born deaths as compared to the expected deaths in the poor beneficiaries of the scheme.

Interpretation: This study of the government program shows that at least in some areas of India, it is possible to develop large scale partnership with private sector to provide skilled birth attendance and EmOC to poor women at a small expenditure. This study shows the possibility of addressing the human resource deficit in rural areas of developing countries.

The International Politics Of Sexual And Reproductive Health: Broken Promises, Emerging Crisis

TK Sundari Ravindran
Honorary Professor, Achutha Menon Centre, SCTIMST

In 1994 at the ICPD, 179 countries made a commitment to universal access to reproductive health services by 2015. Less than a decade from the target year, the burden of sexual reproductive ill-health remains enormous. In addition to the half-a-million maternal deaths every year, millions experience unwanted pregnancy and unsafe abortion, or preventable sexually transmitted infections. Sexual and reproductive health services are unavailable or grossly under-funded and of poor quality in many developing countries.

One of the major obstacles to improving sexual and reproductive health (SRH) is resources. With the exception of HIV/AIDS, SRH has received only a fraction of the funding promised by donors in 1994. Another is the approach to health reform that emphasizes cost-effectiveness and privatization, which has resulted in a narrowing rather than an expansion of publicly funded SRH services, and increasing costs to the user.

An equally if not more formidable obstacle to progress in SRH has been the confluence of conservative political, religious and cultural forces. The Mexico City Policy of the US reinstated in 2001 has resulted in a major funding crisis for all organizations providing abortion counseling or services. Also, in almost every UN Conference since 1994, conservative forces have attempted to sabotage the SRH and rights agenda making progress difficult. In 2001, the Millennium Declaration succeeded in keeping out universal access to SRH services as one of the agreed MDGs, resulting in reduced priority and consequently, reduced donor support for SRH services.

Sexual and reproductive ill health is a major cause or morbidity and mortality especially in low-income countries. To not address these comprehensively, either through misguided approaches to health reform or for reasons of ideology would lead to disastrous public health consequences.

Government Initiatives For Safe Motherhood In Tamil Nadu

P. Padmanabhan
Director, Department of Public Health and Preventive Medicine Government of Tamil Nadu

The Maternal Mortality Ratio (MMR) in Tamil Nadu, as observed earlier, was disproportionately impacted till 2000, despite a positive shift towards institutional deliveries. Besides promotion of quality antenatal care and growth of institutional deliveries, Tamilnadu's public initiatives to impact maternal deaths aimed at gearing up its machinery to improve surveillance of maternal deaths and to initiate corrective measures. The impact is visible in the declining trend in MMR since 2001.

The systemic corrections initiated addressed the key issues

- surveillance of maternal deaths
- notify and conduct verbal autopsy, pinpointing the determinants of maternal deaths
- continuum of care from the community to the first-referral level health facility with shortening of three types of delays
- access to Emergency Obstetric Care (EmOC) services at the first referral level round the clock.

In Tamil Nadu nearly 65% of the deliveries are conducted in the Govt health institutions which is the highest in the country.

The conduct of verbal autopsy by the District Collectors in which the relatives of the deceased participate improved the accountability of the service providers. The findings of the verbal autopsy and maternal death review led to the establishment of Comprehensive Emergency Obstetric Care and Newborn Care Centres in two to three strategically located hospitals in each district.

The provision of 24 hour delivery care services in the PHCs with staff nurses improved the delivery performance of the PHCs by 100%. The improved access to delivery services in the PHCs and HSCs resulted in the reduction of deliveries in the private sector.

The maternal mortality fell by 35% from 2001- 2005. The availability of flexible funds and community monitoring systems through Rogi Kalyan Samities in all the PHCs and Govt hospitals improved the patient amenities and ambience of the PHCs and Govt hospitals.

Growing Burden Of Noncommunicable Diseases In The Southeast Asia

J. Leowski,
Regional Adviser, Noncommunicable Diseases, World Health Organization, Regional Office for South-East Asia, New Delhi, India

Chronic, noncommunicable diseases (NCDs) account for 54% of deaths and 48% of the disease burden in the South-East Asia Region of WHO. If effective public health action is not taken, over the next 10 years, disability and premature death from NCDs will increase by more than 21% in the Region.

A worrisome fact is that middle-aged adults show disproportionately high death rates due to NCDs in comparison with those living in more developed countries. People in countries of the Region tend to contract disease at younger ages, suffer longer and die sooner than people of high-income countries. Almost half of the 89 million NCD related deaths projected in

the Region during the next 10 years will be premature. NCDs are increasingly common among the poor. This is due to lack of awareness of risk factors, inability to modify lifestyles, and other economic reasons.

The major risk factors for NCDs are well known. They include tobacco and alcohol use, unhealthy diet (high in total energy, fat, salt and sugar, low in fruit and vegetables), physical inactivity, high blood pressure, overweight and high blood levels of glucose and cholesterol. The high level of risk factors among the population explains the current epidemiological situation, and points to future increases in NCD prevalence and deaths.

Beyond the risk factors, there are socioeconomic determinants that lie outside the domain of the health sector. Incorporating comprehensive NCD prevention and control interventions into existing public health programmes as well as socio-economic programmes outside the health sector have the potential to prevent at least 80% of all cases of heart disease, stroke and diabetes and 40% of cancers. To facilitate this process the WHO Regional Framework for Prevention and Control of NCDs was formulated in early 2006.

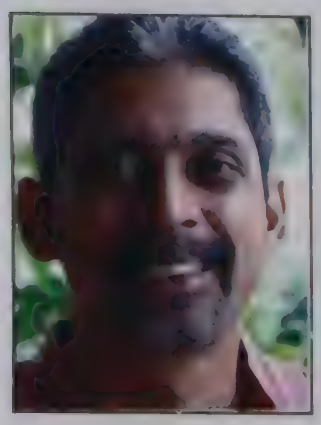
Implementation of the Regional Framework for Prevention and Control of NCDs requires the coordinated efforts of multiple stakeholders from the government, the private sector, civil society and international agencies. In September 2007 the Regional Committee for South-East Asia endorsed the regional framework and urged Member States to initiate appropriate steps to formulate, update and strengthen national policies, strategies and programmes for integrated prevention and control of NCDs

Responding To The Threat Of Chronic Diseases In India

K Srinath Reddy
President, Public Health Foundation of India

As the rising health and economic burdens of chronic disease pose serious challenges to development, equity and health systems in India, a comprehensive public health response becomes imperative.

A coherent strategy for prevention and control of chronic diseases has to integrate evidence based, context specific, resource sensitive and equity promoting interventions which impact on the multiple determinants of chronic diseases at the level of populations as well as individuals. A life span approach, involving risk minimization / risk reduction at all stages of life, is essential. Policy interventions, which have a population wide impact and have the potential for reducing population attributable risk in a relatively short time frame, must be implemented not only in the health sector but also in all other sectors that influence the varied determinants of health. Health promotion must be communitized, customized to varied setting and integrated into major national health programmes. Detection and protection of individuals must be cost-effectively incorporated into primary health care. Health systems must be reconfigured to enable efficient delivery of chronic care and non-physician care providers must be empowered to contribute more effectively to the prevention and control of chronic diseases.



Gender And Mental Health: Evidence From India

Vikram Patel
London School of Hygiene & Tropical Medicine, UK & Sangath, Goa, India

Gender roles influence the control men and women have over the determinants of their health, for example their economic position and social status, access to resources and treatment in society. Gender disadvantage is crucial to understanding the epidemiology of health problems in developing countries. Gender based violence is a widely used indicator of gender disadvantage. This lecture will review the evidence on the association between gender based violence and mental health, focusing on two important associations: the increased risk of GBV in women who live with men who have drinking problems, and the adverse mental health consequences for women who experience GBV. The lecture will present findings from two major multinational surveys (the landmark WHO Multi-Country Study on Women's Health and Domestic Violence against Women and the WorldSAFE surveys both of which included sites in South Asia). The lecture will also present findings of two longitudinal studies from Goa, one which enrolled 270 mothers in the third trimester of pregnancy and one which enrolled a population based sample of 2494 women. These studies examined the association, prospectively, of exposure to a range of indicators of gender disadvantage, including violence, with the risk of depressive disorder and suicide. These studies confirm the important role of alcohol abuse by men as an independent determinant of gender-based violence, and gender-based violence as an independent social determinant of women's mental health problems. The implications for the mental health and public health professions in strengthening the health sector response to gender-based violence and its consequences will be considered.

Global Burden Of Tobacco

Harry Lando
Professor of Epidemiology, University of Minnesota

Tobacco has entered the era of globalization. Currently 4.9 million people die per year. By 2030 10 million people per year will die with 70% of these deaths occurring in developing countries. In India alone there are 240 million tobacco users over the age of 15. The current death toll from tobacco in India is 700,000 and this number will increase. By 2030 tobacco will become the leading preventable cause of death worldwide and will kill more people than all of the following combined: AIDS, TB, automobile accidents, homicide, suicide, and childbirth. Every day worldwide there are between 80,000 and 100,000 young people starting to smoke. In 2002 Philip Morris, BAT and Japan tobacco operated in over 50 countries each and had combined tobacco sales of over $121 billion, a sum greater than the combined GDPs of 27 countries. Tobacco is unlike other threats to global health. Mosquitoes have no lobbyists. The poor suffer from tobacco use both with high rates of smoking and with diversion of limited household income to purchase of tobacco products. Tobacco farming leads to high levels of debt, low income, child labor, and pesticide and nicotine poisoning. Needed is a concerted global response. There are now 151 parties to the Framework Convention on Tobacco Control (FCTC), the first international public health treaty. Included are comprehensive bans on tobacco advertising, promotion, and sponsorship; large rotating health warnings on cigarette packages, and protection from exposure to tobacco smoke in public places. Incremental steps make a difference: A 10% increase in the price of cigarettes in the developing world could lead to 36 million fewer smokers and save 9 million lives. Networking is critical. The 14th World Conference on Tobacco OR Health to be held in Mumbai March 8-12,2009 presents an unprecedented opportunity.

Tobacco As A Major Epidemic In India

Prakash C. Gupta
Healis-Sekhsaria Institute for Public Health, Navi Mumbai, India

In most countries, tobacco epidemic is synonymous with cigarette smoking. In India, cigarette smoking is a minor part of the tobacco problem. The major smoking problem is bidi as nearly a trillion bidis are produced in India versus about 100 billion cigarettes. About 40% of overall tobacco consumption is in the form of smokeless tobacco use, in a wide range and variety of products. The available knowledge base which is basically for cigarette smoking seems seriously deficient when applied to India. Several components of tobacco epidemic in India are additional: One, bidi smoking seem to confer a risk even higher than cigarette and even a very low level of smoking - in a large cohort study in Mumbai, the risk ratio for all cause mortality was 1.64 among bidi smokers (1.37 among cigarette smokers) and 1.42 among those smoking 1-5 bidi per day. Two, the risk of death by tuberculosis was very high among bidi smokers (RR-2.60) and in India, 200,000 excess TB deaths could be attributed to smoking. Three, in the current double burden of underweight and obesity problem in India, tobacco compounds the problem as the risks are multiplicative for all categories of body mass index and of tobacco use for example, BMI<16 RR-2.68; smoker RR-1.38; BMI<16 and smoker RR 3.36). Four, smokeless tobacco use, common among women in India, causes adverse reproductive outcomes in the form of low birth weight (~105 g), lower gestation period (~ 6 days) and higher stillbirth rates (RR 2.6). Five, the widespread gutka use among young individuals due to targeted advertising and promotion campaign has caused an epidemic of oral submucous fibrosis and is leading to an increased incidence of oral cancer among young persons. Tobacco epidemic in India is different from western countries, yet it is equally or even more serious.

Introducing Tobacco Cessation In Kerala, India: An Overview Of Project Quit Tobacco International-1 (Qti-1).

K.R. Thankappan Professor and Head; AS Pradeepkumar; C U Thresia; Sailesh Mohan
Achutha Menon Centre for Health Science Studies, SCTIMST

Introduction: Project QTI-1 was initiated in July 2002 as a pioneering attempt to develop culturally appropriate tobacco cessation programs within the health sectors of India and Indonesia. Both countries have high prevalence of tobacco use across social classes, diverse spectrum of indigenous and imported tobacco products, and almost little or no emphasis on tobacco cessation as a public health priority.

Objective: It was envisioned that this project would build tobacco research and training capacity within these two countries as well as provide a prototype for similar research in other developing countries.

Methods: In India, Kerala was selected based on feasibility. Research activities included documenting existing tobacco education and cessation programs, creating a depository of tobacco related publications, training in tobacco research methods, assessment of medical school curricula for incorporating tobacco education, and formative research toward development of baseline instruments, and culturally sensitive tobacco education materials for intervention in clinical settings. Pilot cessation interventions in clinical settings and

outreach training in tobacco cessation were also conducted.

Results: We found that 15% of physicians and medical students were current smokers and a common belief among doctors that smoking 5-10 cigarettes per day was not harmful to health. Tobacco use prevalence among diabetes and Tuberculosis patients was much higher than that of general population. We developed tobacco education modules, culturally sensitive cessation materials and intervention methods. We learned when and where interventions could take place and how we can potentially incorporate tobacco education and cessation into the medical curriculum. Four researchers from Kerala received training in tobacco cessation. Outreach activities included a formal project launch event, cessation training for healthcare professionals, and organization of a national conference

Conclusion: Project QTI -1 could build tobacco research and training capacity in Kerala, India which can be replicated in other Indian states and other developing countries.

Project Quit Tobacco International: Building A Tobacco Cessation "Community Of Practice" In India

Mark Nichter
Professor, University of Arizona

This presentation provides a brief overview of research and training activities to be undertaken during the second phase of Project Quit Tobacco International (QTI 2).

In order for tobacco cessation to become normative medical practice in India, a proactive research and training environment will need to be established. During QTI 2, medical and nursing colleges will be supported in their efforts to train a next generation of practitioners to routinely ask patients about tobacco use and encourage cessation. Selected schools will become the hub for recruiting and training a cohort of tobacco researchers who will form a tobacco cessation research network (TCRN). As a first step to mobilize TCRN, QTI 2 will foster cessation efforts among health professionals committed to the management of patient populations dramatically effected by tobacco (e.g.,TB and diabetes patients). After providing in-service training on the latest research related to tobacco use and culturally sensitive approaches to cessation, health professionals will be invited to participate in research designed to identify the most effective means of assisting patients to quit tobacco use in real world situations. Cessation activities will also be extended to the community through promoting cessation as a family and women's health issue and an occupational health right. The specific aims of QTI-2 are to:

1. Expand knowledge capacity through dissemination of a model tobacco education curriculum for medical schools.
2. Create a critical mass of 9 medical schools modeling integrated tobacco education and engaging in tobacco-related research within three states of South India.
3. Involve partner medical schools in tobacco-related community-based research to heighten public awareness of the benefits of tobacco cessation and provide research training opportunities for tobacco cessation researchers. QTI partner institutions will work with government health workers, local NGOs, and private health institutions.

Build capacity in tobacco-related research by creating a tobacco cessation research network that supports collaborative research and the sharing of research experiences within each project state.

Gender As A Social Determinant Of Health

Gita Sen
Professor, Indian Institute of Management Bangalore

Gender inequality damages the health of millions of girls and women across the globe. It can also be harmful to men's health despite the many tangible benefits it gives men through resources, power, authority and control. Taking action to improve gender equity in health and to address women's rights to health is one of the most direct and potent ways to reduce health inequities overall and ensure effective use of health resources. Deepening and consistently implementing human rights instruments can be a powerful mechanism to motivate and mobilize governments, people and especially women themselves.

Gender relations of power constitute the root causes of gender inequality and are among the most influential of the social determinants of health. They determine whether people's health needs are acknowledged, whether they have voice or a modicum of control over their lives and health, whether they can realize their rights. Addressing the problem of gender inequality requires actions both outside and within the health sector because gender power relations operate across such a wide spectrum of human life and in such inter-related ways.

However, gender intersects with economic inequality, racial or ethnic hierarchy, caste domination, differences based on sexual orientation, and a number of other social markers. Only focusing on economic inequalities across households can seriously distort our understanding of how inequality works and who actually bears much of its burdens. Because income / wealth is only one source, however powerful, of social inequality, a proper understanding of its impact on health means that we must look into how it interacts with other sources of social inequality such as gender, race or caste.

Financing Health Care In India- Current Situation And Future Options

Peter Berman
World Bank New Delhi

This presentation will review recent trends and current status of government and non-government health financing in India and discuss prospects for the coming years. Based on increasing government budget allocations for health, the goal of raising public spending to "2-3% of GDP" will be assessed. The continued high level of out of pocket spending will be discussed in relation to increased interest in developing health insurance as a financing option.

Equity In The Age Of Developing Health Care Markets: Some Thoughts On What We Don't Know

V. R. Muraleedharan
Professor of Economics, Department of Humanities and Social Sciences Indian Institute of Technology, Madras

A widely agreed operational definition of health equity is that that it refers to "..... the absence

of systematic disparities in health (or its social determinants) between more and less advantaged social groups"(Braveman and Gruskin 2003). For example, if

a section of a population, by virtue of being poor, suffers from lack of access to basic care, is said to suffer from health inequity. According to this view, social determinants includes not only living conditions but also social policies that influence health care provision and utilization and quality of health care services. A plethora of empirical studies in the past have been motivated by this framework of health equity. But I wish to observe that even such a broad framework of health (in) equity has not sufficiently motivated the policy research groups to undertake studies to look into "systematic" weaknesses in the implementation of policies that determine directly or indirectly health status or consumption and quality of healthcare across various social groups. A few examples of such studies would illustrate this observation: (a) lack of effective implementation of the Indian Water Pollution Act (1972) has led to systematic deprivation of better health status of those already poor (b) lack of effective implementation of the Transplantation of Human Organs Act (1995) has led to systematic exploitation of the poor donors by the rich recipients and widespread commercialization of trade in human organs, (c) lack of effective implementation of the Consumer Protection Act has led to systematic deprivation of the poor to legal avenues to address their grievances arising from negligence or deficiency in the provision of healthcare, and (d) lack of effective implementation machinery in the use of pesticides has led to systematic deprivation of protection from ill-effects of exposure to pesticides among the poor agricultural labourers across the country.

Our current understanding of the design and implementation of policies that influence health status or consumption of health care is very poor. I propose a research agenda to throw more light on "design and implementation of programmes or interventions or regulatory mechanisms" that are intended to promote equity in health.

Regulation Of The Private Sector : Role, Authority And Rules

Rama V. Baru
Associate Professor, Centre of Social Medicine and Community Health, Jawaharlal Nehru, University (Delhi)

Regulation of the private sector has been a major area of challenge and seen as a key area of reform. Often regulation is focused on provisioning of health services alone. This presentation seeks to take a systemic view of regulation and argues that concerns of regulation have to address each of the sub systems within the health services. Hence regulation of financing, provisioning, education, research and technology need to be addressed in a comprehensive manner. Much of the state initiatives have addressed provisioning but other subsystems have been largely unaddresed. The discourse on regulation in public health needs to go beyond the methods and tools viz. forms of regulation and start to look at the key actors who would enable or thwart efforts at regulation; their status and role; the kind of power and authority they wield in determining policy directions. This kind of an analysis will help us to unravel the process and direction of regulatory frameworks that have evolved thus far in the different sub systems of the health service systems.

Kerala's Health System: Crisis And Response

V. Raman Kutty
Professor, Achutha Menon Centre, SCTIMST

Kerala state has attracted attention in the last 50 years for a social sector centred approach to developments, which has resulted in considerable gains in health. Among other things, development of health services itself has been a key factor which helped this achievement.

Human Resoureces For Health In India: Challenges Ahead

B.Ekbal
Former Vice Chancellor, Kerala University

Human resources need to be developed to address major health problems in the country. India still has a large proportion of disease burden due to major communicable diseases such as Malaria, Tuberculosis, HIV/AIDS and emerging infections. Maternal mortality is one of the highest in the world. Non-communicable diseases such as cardiovascular diseases, cancer, diabetes, chronic lung diseases and mental illnesses are increasing. Road Traffic accidents and other injuries are also on the rise.

The state has been characterized by considerable state investment in health infrastructure and training, which has helped make health care accessible to the large share of the population. In turn, this strong public sector in health has also spawned a vigorously growing private sector, by promoting demand and ensuring supply.

Since the start of the nineties, however, public expenditure in health in Kerala has suffered from a serious crunch in availability of funds: the result has been a steady deterioration in quality of services. Currently, the larger share of the population prefer private services, and the young crop of graduating doctors no longer see public employment as an attractive option. However, the response to this crisis, from both government and the civil society, has been disappointing. The dimensions of this crisis has not entered the public debate in a big way, and stop gap solutions are seen as the answer. Two major initiatives in the last 10 years, the decentralized planning initiative and the modernizing government programme, in spite of their potential to act as corrective policy interventions, did not achieve the expected objectives. Overcoming the crisis calls for concerted action from policy makers and other civil society players in a systematic manner, addressing issues such as access, empowered decision making, financial equity, and technology upgradation.

Development of adequate and appropriate human resources for addressing the above health problems is a challenge. It is important to assess the quantity, distribution and quality of human resources for health. The presentation will address the type of human resources required for India, for example, the ratio of doctors to paramedical personnel, distribution of doctors and other health professionals in the country and the quality and the availability of institutional support for training.

Public Health Education In India At Undergraduate And Postgraduate Levels: Challenges And New Paradigms

Ravi Narayan
Community Health Advisor, Society for Community Health, Awareness, Research And action

In recent years post graduate Public Health Education in India has gained greater significance, political interest, multiinstitutional interest and increased funding and investment.

The paper will present a brief historical review of the policies on Public Health Education in India and the initiatives in undergraduate and post graduate education; an overview of the key policy challenges and distortions; a short birds eye view of alternative and innovative experiments in different sectors; and the factors that have led to a renewed interest and commitment to enhancing public health education in the country.

It will also outline the challenges ahead for the public health professional community to ensure that the large number of evolving institutes and courses in public health in the last few years focus on an India relevant public health agenda and help to strengthen the state human resource development in public health, which is an urgent imperative today.

The paper will also suggest how a networking of all these initiatives with other sectors and players who are promoting health policy and health system priorities relevant to the poor and marginalized can result in a strong public health movement that will bring public health system development high on the political and educational agenda of the country.

Apart from a constitutional mandate to reach all levels of the population with basic health care, India has also been an enthusiastic signatory of the Alma Ata Declaration and the more recently the Millennium Development Goals. Strengthening public health systems by the state is an important pre-requisite for attainment of these goals. The paper will highlight the challenges and opportunities for the new public health educational initiatives especially in this broader context.

RE-EMERGENCE OF CHIKUNGUNYA: TAMILNADU EXPERIENCE

M.D. Gupte, M.V. Murhekar
National Institute of Epidemiology (ICMR), Chennai

Chikungunya fever re-emerged in India during 2005 after a gap of about 32 years. In Tamilnadu, the disease was first noticed in March 2006 in Thiruvalluvar district that borders Andhra Pradesh, where Chikungunya outbreak was on-going. By October 2006, more than 60,000 suspected cases of the disease were reported from 35 of the 40 administrative districts. There were few media reports of deaths due to chikungunya. However, none could be attributed to the disease.

Epidemiological, environmental and entomological investigations conducted during the outbreak indicated that the disease affected a large proportion of population, especially adult females. The epidemic curve showed multiple peaks suggesting that the infection was introduced in the population at different points of time in a given area. Outbreak occurred during summer months and there was acute shortage of water in most of the affected villages. People stored water in various peri-domestic containers. Aedes aegypti larvae were found in abundance in peri-domestic containers. GIS mapping of the area revealed a significant positive correlation between disease attack rates and the mosquito larval breeding.

Presence of Aedes aegypti in the area, favorable conditions for the vector breeding, susceptibility of the population for the new genotype of the virus were some of the important factors for explosive nature of the outbreaks in the state. As a response to these outbreaks, state health authorities initiated stimulated passive surveillance and conducted vector control measures (anti-larval and anti-adult) in affected areas. Guidelines were issued for appropriate management of cases and avoiding irrational use of medications. Besides, several campaigns were conducted to educate the communities about the disease and importance of cleaning the peri-domestic water containers periodically.

Several important lessons could be learnt from Chikungunya outbreaks. These include importance of surveillance, rational drug use in management of cases, education of community about self limiting nature of disease with almost zero mortality and involvement of community for control of mosquito breeding.

Oral Abstracts

COMMUNICABLE DISEASES

AB_86 CLINICO- EPIDEMIOLOGICAL FEATURES OF CHIKUNGUNIYA EPIDEMIC AT ALAPPUZHA

Ramesh K, Anish T.S., Sreekala K N
Department of Community Medicine, Medical College, Thiruvananthapuram, Kerala, India

Background and Rationale: India along with many other countries, geographically located in the coast of Indian ocean is facing a Chikunguniya pandemic which started in 2005. Kerala state may perhaps the most affected land, most of the southern districts are is severely affected. The epidemic struck Alappuzha district in 2006 along with the coastal belt of Trivandrum. Thousands of people affected by Chikunguniya at Alappuzha, which was an alien disease at that time. This study is about the clinical features of Chikunguniya, as presented in Alappuzha District in 2006. The various indices of Aedes larval burden of the place are also calculated.

Methodology: Study design- Cross sectional study; Study setting- Muhamma Panchayat, Alappuzha, Kerala; Sampling method- Cluster sampling; Sample size- 77 households, 386 people

Results : 46% of the population was affected. Among affected individuals 51.5% are males and 48.5% females. In 61.8% of people the disease started only as joint pain, and in another 16.2% people it started as fever and then joint pain. In 7.4% people, a combination of both. Knee joint is the most affected joint. The Briteau index of Aedes larvae (total number of positive containers per 100houses) was 83.12 at that time. A value more than 20 is considered as explosive.

Conclusion: The clinico- epidemiological profile of Chikunguniya in Kerala seems to be different from that seen in Reunion islands where extensive studies in this regard have taken place. This preliminary study highlights the need for an extensive in-depth research of Kerala Chikunguniya outbreaks.

AB_127 TREATMENT COSTS AND WORKTIME LOSS DUE TO AN OUTBREAK OF CHIKUNGUNYA IN RURAL ORISSA, INDIA

Saji Saraswathy[1], Ashis Das[1], Madan Mohan Pradhan[2]
[1]Public Health Resource Network, Orissa [2]Department of Health & Family Welfare, Government of Orissa

Background: In this study we tried to determine the economic loss in terms of treatment costs and productivity loss caused by an outbreak of Chikungunya in a rural population of Orissa.

Methods: We interviewed one earning member from each family who had an episode of Chikungunya during the last five months from Kural village in Nayagarh district of Orissa. We collected information regarding socio-economic status, health care expenditures, treatment history with respect to type of provider, loss of productive time along with loss of earning.

Results: Out of all respondents, 18% were females and 66% belonged to low socioeconomic status. The mean duration of illness was 37 days. The mean cost of diagnosis found to be high (INR 1660) followed by mean cost of consultation and drugs (INR 1215) and transportation (INR 307) among the various costs of care in the sample. Mean workdays lost were 42 and the mean work hours lost was 374.

Conclusion: The impact of the disease in terms of cost of treatment and loss of productive time was significantly high irrespective of gender and socio-economic status. We suggest the strengthening of the existing public health care facilities to equip them for all kinds of diagnostics, full time availability of care and manpower, and also ensuring affordable access to care in geographically inaccessible areas. We also suggest launching an insurance scheme for communicable diseases with financial protection to cover up the friction period.

AB_128 BREEDING PREFERENCES OF AEDES MOSQUITOES IN RELATION TO DIFFERENT ECOLOGICAL SETTINGS IN KERALA

Farook Umarul[1], Sudharmini S[1], Dileepkumar T[2], Ramesh K[1]
[1]Department of Community Medicine,Medical College, Thiruvananthapuram, India [2]Senior Biologist, Filaria Survey Unit, Kasargod

Introduction: It is an established fact that Aedes mosquitoes are container breeders. Aedes aegypti and Aedes albopictus which are the incriminated vectors of Dengue and Chikungunya, are very much prevalent across different eco-regions in the state.

Objectives: To study the distribution of Aedes species mosquitoes in the different ecological settings in Kerala.

Methodology: A cross - sectional survey in the different ecological settings of Kerala namely: low land, mid land and high land. From each of these terrains, urban and rural settings were selected. From each setting 100 households were selected for the study as clusters.

Results: The major species of Aedes found out were A. aegypti, A.albopictus and A.vittatus. A. aegypti showed a preference to artificial containers such as tins, cans, cement tanks, tyres etc., where as A.albopictus was found mostly in natural habitats such as tree holes, bamboo stumps, leaf axils etc., In the hilly terrains the important breeding habitats were plantations of rubber, cocoa and pineapple. In the midlands of both urban rural areas, the breeding preference was noticed in the water collected in plant axils, plastic containers stored water in tanks, etc.,. In the low land settings, the breeding was found to very from stored water collection, to plant axils (angolam plant).

Conclusion: The predominant Aedes species found in the study area was Ae. Albopictus A wide variety of breeding habitats, - natural and artificial exist in Kerala settings.

AB_129 VECTOR CONTROL STRATEGIES AND ITS IMPACT ON AEDES MOSQUITO PREVALENCE IN THE CHIKUNGUNYA FEVER AFFECTED AREAS IN KERALA.

Sudharmini S, Farook Umarul M, Anuja U, Anish T.S
Department of Community Medicine, Medical College, Thiruvananthapuram, India

Introduction: Chikungunya has very badly struck the rural & urban settings of Pathanamthitta, Kottayam, Kollam district in the months of April-May 2007. A clear cut idea, of how the viral infection is being spread, has been lacking while the outbreak was spreading to reach the epidemic proportions. But much propaganda was given to the people of the affected area as how to practice control measures to reduce vector mosquitoes.

Objectives:To study the impact of vector control measure adopted during the out break of Chikungunya in the Kerala State.

Methodology: The present study was designed as a descriptive one and was conducted in the Kerala settings from where initially cases of Chikungunya fevers were reported. The study areas selected were based on the urban, rural and coastal terrains.

Data Collection: The data on different kinds of vector control activities implemented in the affected places were elicited from the members of the households coming under the field area of concerned primary health centre.

Results: The impact of the control measures implemented in the areas were brought out in terms of breeding preference ratio and vector indices for aquatic stages and per man hour density of adult Aedes Mosquitoes.

Conclusion: There was no appreciable level of reduction of Aedes Mosquitoes in the disease affected areas, thereby showing that the control strategies adopted in the study areas were inadequate.

AB_162 CLINICAL PROFILE OF SUSPECTED PEDIATRIC CASES OF CHIKUNGUNYA CASES FROM ALAPPUZHA

P.R. Sreelatha, Girija Mohan, Anas
Dept. of Medical Education, Medical College Hospital, Alappuzha, Kerala

Introduction: When Chikungunya fever (CGF), a benign Dengue - like viral illness occurring in epidemics, struck Kerala in 2006, the worst affected district was Alappuzha. In view of antigenic variations of virus of present epidemic modified clinical presentation was expected.

Aim of the Study: To study the clinical profile of pediatric CGF cases.

Materials & Methods: Suspected pediatric CGF cases admitted from September 2006 to December 2006 in TDMC Hospital, Alappuzha were studied. Data collected as per performa by interview and case sheet review. Patients were reviewed 3 - 7 months after illness.

Results: 110 cases were studied. Age varied from 32 days to 12 years (mean 8.2yrs). M : F - 0.92 : 1. Maximum cases were from Cherthala taluk, the worst affected. Fever, the universal symptom, lasted 1 - 9 days (mean 3 days). Next commonest were cutaneous manifestation (89%). Characteristic facial flushing and ear erythema was noted in 42.7%. Generalised diffuse erythema noted in 78%. Most subsided within 3 days. Joint symptoms like arthritis & arthralgia were seen in 2/3 cases - knee and ankle joints mainly and also small joints of hands and feet. They were transient, lasting 3 days in 80% cases. Persistent joint symptoms noted in two girls in whom the disease probably unmasked SLE and psoriatic arthritis. Other symptoms were myalgia (63.6%), conjunctival congestion (51%), headache, photophobia, generalised lymphadenopathy. CNS symptoms observed in nearly 1/3rd (29%) with febrile delirium in older children being the commonest. GI symptoms like vomiting, loose tools, abdominal pain noted in 71%. Bleeding manifestations and shock were not seen.

Investigations: CBC did not show any typical changes nor PCV, LFT, CSF studies. IgM card test done from cases selected randomly showed positivity in 3/4th of samples. Mortality was nil.

Treatment: Essentially symptomatic and supportive. Infants and those with strong suspicion of Leptospirosis received antibiotics (4 & 12). Follow up showed residual symptoms in only 2, as already mentioned.

Conclusion: The clinical profile of pediatric CGF was well in accordance with historically reported ones. Sequelae ware minimal.

AB_6 A STUDY ON SOCIAL STIGMA & DISCRIMINATION FACED BY HIV/AIDS PATIENTS IN A TERTIARY CARE SETUP

Lekshmy S P, T.G. Mahanta, A. Barua
Assam Medical College & Hospital, Dibrugarh,Assam

Background: In India, as in else where, AIDS is perceived as the disease of " others"- of the people whose life style is regarded as" sinful" . Stigmatization and discrimination and denials of basic rights with breach of confidentiality are the outcome. The study was undertaken to know about the social discrimination and stigma faced by HIV/AIDS patients in a tertiary care setting. This study can give some baseline data to program planners and assist them in designing appropriate care & support programs for HIV infected individuals .The study highlights confidentiality level maintained by patients and health care providers

Materials and Methods: A cross sectional study in Voluntary Counseling & Testing Centre(VCTC), Assam Medical College, 2005 -2006. 60 HIV positive patients were included after establishing rapport with the help of counselors in VCTC using pretested semi structured schedule. Verbal consent taken from the patients. Selection of the subjects purely purposive. Those who expressed unwillingness for participation were excluded. Data was analyzed using percentages in the different categories.

Results & Analysis: Majority of respondents were males with below metric education (43.3 %) from urban areas (68.3 %). 76.7% were married . 46.7% were supported by the family. 96.7% were accused of having the disease because of their moral transgressions and personal irresponsibility. 20 were victimized for being in socially excluded marginalized groups(commercial sex workers,homosexuals). Expulsion from school & restriction from playing with neighborhood children

was reported in 3.33 % of cases.. 96.7 % suspected confidentiality breach of HIV status. Insults e.g. treatment with holding (90 %), non attendance to their concerns, refusal to put canulas etc were also reported.

Conclusions: Discrimination and stigmatization of HIV/AIDS patients and breach of confidentiality still persists in tertiary care set up also.

AB_66 HIV SURVEILLANCE LACKS COVERAGE OF THE RURAL POPULATION IN SOUTH 24-PARGANAS DISTRICT, WEST BENGAL

Shyamali Rudra[1], R. Ramakrishnan[2], Y. Hutin[4], M.D. Gupte [3]
[1] - FETP scholar, [2] - Faculty, [3] - Director , National Institute of Epidemiology, Chennai, India [4] Resident advisor to FETP, India, WHO

Background: In India, the adult HIV prevalence was estimated to be 0.88% in 2005 of which 57% was from rural background. In South 24-Parganas district, West Bengal, HIV prevalence among Ante-Natal mothers had increased from 0.65% (2004) to 2.25% (2005). We evaluated the representativeness of the periodic sentinel HIV sero-surveillance in South 24-Parganas.

Methods: We assessed the coverage of population subgroups by the two sentinel sites of the district. We also considered the proportion of the district population catered by the NGO-run Voluntary Counselling and Testing Centres.

Results: With 84.3% of the district population living in rural area, both the sentinel sites were in urban area. Among their attendees, 42% of 1920 mothers attending the ante-natal site and 11% of 1158 patients of STD clinic were from rural area. Coverage of the rural population by the NGO-run VCTC-s, though not included in the sentinel surveillance, was higher (98%; 3709/3785). Samples were collected from 21% of 1920 mothers attending ANC and 44% of 337 patients attending the STD site during the surveillance period. About 50% of 60 rural health workers interviewed knew about the symptoms and available services for HIV.

Conclusion: The majority population of the district coming from rural background remained virtually uncovered by any biological HIV surveillance undertaken through urban-based sentinel sites. More sentinel sites and VCTC-s were recommended in the rural areas of the district to identify at-risk sub-populations. Surveillance may utilize NGOs and the private sector. Increased awareness of health workers will enhance surveillance at the community level.

AB_88 CORRELATION OF CD4+ T CELL COUNT WITH SERUM ZINC, COPPER AND SELENIUM IN HIV POSITIVE INDIVIDUALS

Akthar Hussain[1], Amit Malviya[2], Habib Hasan[1]
[1]Department of community Medicine, IMS, BHU, Varanasi, Uttar Pradesh [2]Department of Medicine, IMS, BHU, Varanasi, Uttar Pradesh

Background: The basic role of micronutrients in the pathogenesis of HIV infection still remains a major lacuna in scientific knowledge. Hence, the present study was carried out with an objective to document- Mean level of serum Zinc, Copper and Selenium in patients with HIV infection vis-à-vis healthy controls, and also to find and Correlation of CD4+T cell count with serum Zinc, Copper and Selenium in HIV infected individuals.

Methods: A case-control study with 50 subjects in either arm matched for age and sex. Cases were patients tested positive for HIV by ELISA using two different antigens whereas the controls were healthy subjects. Estimation of micronutrients (zinc, copper and selenium) in serum and urine were done by atomic absorption spectrometer. Necessary statistical techniques were applied for the analysis.

Results: The mean serum level of Zinc in HIV positive patients vis-à-vis controls was $92.60 \pm 18.55 \mu g/dl$ and $136.55 \pm 9.30 \mu g/dl$ respectively, which was significantly low and varied significantly with CD4 cell count ($p<0.001$). The mean serum level of Copper in HIV positive patients was high ($119.95 \pm 7.94 \mu g/dl$) as compared to the controls ($104.74 \pm 5.06 \mu g/dl$) and this does not show any statistical significance with variation in CD4 cells count. The mean Cu/Zn ratio in severe Zn deficiency (serum Zn $<75 \mu g/dl$) was 1.75 ± 0.24 as compared to 1.28 ± 0.24 when serum zinc level is $>$ 75 mg/dl ($p=0.025$). The serum Se levels declined progressively with falling CD4 cell counts ($p<0.001$).

AB_95 HIV CARE DELIVERY: CHALLENGES FOR FAMILY MEMBERS

Shilpa Karvande[1], Karina Kielman[2], Vidula Purohit[1], John Porter[2], Sheela Rangan[1]
[1]The Maharashtra Association of Anthropological Sciences, The Centre for Health Research and Development [2]London School of Hygiene and Tropical Medicine, Health Policy Unit, UK

Background: With the maturing HIV epidemic in India and wider public sector access to ART, health care facilities are restricted in their capacity to deliver comprehensive care. The burden of care will increasingly fall on to family members; hence it is worth understanding the challenges faced and the costs born by these informal care providers.

Methodology: To understand the role of family members as HIV care providers, qualitative research was conducted in rural Maharashtra in 2007 over a period of six months. Nineteen HIV-infected persons and 31 care providers in their respective families were interviewed with the help of an in-depth guide and data were thematically analyzed.

Results: Family members played a substantial role of providing physical care, emotional and financial support. This role is challenging not only because of its "multi-tasking" nature, but also due to the emotional pressures placed upon care providers, including the dilemmas with regard to the care of sick versus healthy family members and concerns about parenting capacity. They also face the repercussions of social stigma and financial crises on their help seeking.

Conclusion: While addressing care efforts of family members of HIV infected persons, it is essential to consider what social and emotional costs they pay at individual and family level, beyond the burden of daily care provision. Efforts should be targeted to have a family centered care program, if not to improve quality of life of informal care providers, to at least alleviate the stresses caused to them because of this additional burden.

AB_99 ACCESS TO ARVS: BOTTLENECKS IN TREATING HIV/AIDS IN HIGH PREVALENCE DISTRICTS

Saju Joseph[1], Karina Kielman[2], Kabir Shiekh[2], Swathi Patil[1], John Porter[2], Sheela Rangan[1]
[1]Maharashtra Association of Anthropological Sciences, Centre for Health Research and Development, Pune [2]Health Policy Unit, London School of Hygiene and Tropical Medicine, London, UK

Background: In India, anti-retroviral drugs (ARV) have been available in the private sector since a decade and in the public sector since 2004 through the anti-retroviral therapy (ART) rollout programme. Despite this equitable and sustained access to ARVs is still a problem for people living with HIV/AIDS (PLHA). Understanding the bottlenecks to ART is hence of critical importance in ensuring universal access.

Methods: Surveys were undertaken in one high-prevalence district each of Andhra Pradesh, Maharashtra and Orissa. Using a semi-structured interview schedule, 347 PLHA were interviewed of which 84 reported being on ART. We examine these patients' experiences in accessing and utilizing ART from various sectors and current needs with regard to ART.

Results: Roughly a fourth (n=20/84) of the PLHA had first started ART in the private sector. Five of these patients had stopped taking treatment while ten had switched over to the public sector, since they could not afford the cost of ARVs in the private sector. Although the public sector offered free ARV drugs, inappropriate counseling, side effects of ARVs, inconvenient timings, long commuting distances and unaffordable travel costs formed barriers. PLHA felt that ART centres should be decentralized to reduce the cost and time of travel. Other needs included provision of nutritional supplements and support for management of opportunistic infections (OI).

Conclusions: Although ARVs are available to PLHA both in the public as well as private sectors, several key issues need to be attended to in order to remove the bottlenecks to sustainable access to ART.

AB_18 MALE CIRCUMCISION AS A PREVENTION OF HIV INFECTION IN SUB SAHARA AFRICA

Gordon Nyabade, Go Fishnet Youth Project

Risk factors for HIV/AIDS infection in adults in luo rural Kenyan community:

Objective: To study in depth sexual history and sexual behaviour variables as risk factors for HIV/AIDS infection in a rural Kenyan population.

Methods: Following a socioeconomic and serological survey of a rural population in Kisumu District, Western part of Kenya, 233 randomly selected HIV/AIDS-positive cases and 233 negative controls matched on age and village of residence, were invited in October 1990 to participate in a case-control study. A total of 132 cases and 161 controls attended for in-depth investigation including an interview about sexual behaviour.

Results: The factor most strongly associated with increased risk of infection was a greater number of lifetime sexual partners, with odds ratios (OR) of 2.1 and 4.9 for those reporting 4-10 and 11 or more partners, respectively, compared with those reporting less than four partners. Having only one sexual partner did not provide complete protection, a total of seven (one male, six female) subjects reporting only one sexual partner were HIV-1-positive. Other significant factors were a history of genital ulcers [OR, 2.9; 95% confidence intervals (CI), 1.0-9.1) and not being a Muslim (OR, 5.4; 95% CI, 1.8-16.5) suggesting a possible protective effect of circumcision. There was a suggestion that those who married within the last 7 years (OR, 2.4; 95% CI, 0.9-6.1) and men exposed to menstrual blood (OR, 5.7; 95% CI, 0.7-49.8) were at an increased risk of HIV/AIDS infection.

Conclusions: These results confirm the predominant role of sexual behaviour in the HIV/AIDS epidemic. Of particular concern is the observation of HIV/AIDS infection among those reporting only one partner. Where HIV/AIDS infection is widely distributed in the general population, risk reduction strategies should, in addition to the promotion of partner reduction, place strong emphasis on safe-sex techniques.

AB_30 AWARENESS OF HIV/AIDS AND EFFECT OF INTERVENTION

Suresh Badhan[1], Usha Rani[2], Jai Pal Singh[3], Panna Lal[4], Neelam Verma[5], Kalpana Kumari[6]
[1]Community Medicine, MAM College, & HKMC Trust, New Delhi, India [2]HKMC Trust, New Delhi, India, [3]Community Medicine, MAM College, New Delhi [4]Community Medicine, MAM College, New Delhi, India, [5]HKMC Trust, New Delhi, India [6]Community Medicine, MAM College, New Delhi India

Introduction: India is heading towards having the largest number of HIV positives in the world if the current ongoing trends continue. Majority of the new infections occur among the adolescents. This is due to their indulgences in sexual practices because of experimentation following peer pressure and lack of knowledge.

Methodology: The study was conducted in 27 schools of Delhi. A workshop was conducted in each school for students of an average age 15 years. Initially a semi-structured, pre-tested performa was used to collect the information after which a movie and an aggressive interactive session to clear their doubts. Finally, students filled same performa again and the data were analysed using epiinfo software.

Results: Majority of the students (99.4%) knew name of the disease but knowledge regarding the other aspects of the disease was extremely low. Only 36.5% could name one or more mode of transmission of the disease, which increased to 95.6% after the session. Though 71% of the respondents said the disease is preventable but only 10.5% could name one or more preventive measures and this level increased to 97% after the interactive session. Attitude towards HIV +ves too showed a healthy shift. While only 77.8% favoured HIV +ves studying with them, the figure changed to almost 100% after the intervention. Similarly 33.3% favoured home care for HIV +ves and the opinion expressed after the intervention favoured 73.8% home care.

Conclusion: There is grossly deficient knowledge among adolescents. Thus merely adding to the curriculum wouldn't suffice, vigorous intervention is needed to cultivate positive attitude towards sex education and the HIV + person.

AB_32 A COMPARATIVE STUDY ON QUALITY OF STI CARE IN PRIVATE ALLOPATHIC CLINICS: PSI/AVAHAN'S KEY CLINIC FRANCHISE PROGRAM IN INDIA

J. Joson Meloot, Maharajan Muthu
Population Services International (PSI)

Background: Population Services International (PSI) is implementing STI franchise program in Andhra Pradesh, Maharashtra, Karnataka and Tamil Nadu through private allopathic health care providers (HCP), branded as Key Clinic Network (KCN), to provide quality STI care. KCN doctors get trained once in three months on syndromic management of STIs backed by monthly support visits. To assess quality of STI care, PSI conducts periodic comparative studies among KCN and non-KCN HCP.

Methods: Lot Quality Assurance Sampling technique was used for assessing quality of care. Simulated patients, men exhibiting and testing positive for three specific STI syndromes; urethral discharge (UD) and herpetic and non-herpetic genital ulcerative disease (GUD), were used. Variables analyzed were whether or not doctors gave correct treatment for UD and GUD, encouraged condom usage with sex partners, and advised partner treatment.

Results: Among KCN doctors, proportion giving correct treatment for UD, GUD, advising partner treatment and encouraging condom use was 58%, 2%, 31% and 50% respectively. Whereas among non KCN doctors proportion for the same parameters were 6%, 5%, 3% and 29% respectively. Key Clinics scored significantly higher on correct treatment for UD, advising partner treatment and encouraging condom use ($p<0.05$)

Conclusion: KCN emerged significantly better, than non KCN doctors among 3 out of 4 quality of care indicators. Various components of franchise program like training, support visits, job aids, and branding have contributed to better quality of STI care. Franchise program has apparent benefit for both provider and client, providing opportunity to expand to other states / districts.

AB_106 ASSESSMENT OF QUALITY OF CARE FOR SEXUALLY TRANSMITTED INFECTIONS TREATMENT THROUGH SIMULATED PATIENT STUDY FOLLOWING LOT QUALITY ASSURANCE SAMPLING

Avinash Sadashivaiah[1], Aseem Sharma[2]
[1]Training, [2]M&E PSI, New Delhi, India

Background: Population Services International, with funding from Avahan, created the Key Clinic Network (KCN) among 900 private allopathic doctors to provide quality STI services to male clients of sex workers in four high HIV prevalence states in India. To evaluate the project activities i.e. ensuring access to correct STI treatment, the performance of KCN doctors was gauged at regular intervals.

Methods: Assessment of KCN doctors' performance used the 'Simulated Patient Approach'. Real male STI patients with specific symptoms, who would pose as mystery clients to doctors, were recruited and trained. Ethical norms were strictly adhered to. The Lot Quality Assurance Sampling methodology was adopted to draw the sample of doctors to be visited in each state; 19 KCN doctors were randomly selected in each state.

Results: Two rounds of this study have been completed so far; a baseline in December 2005 and a follow-up in December 2006. The findings helped in keeping track of the indicators regarding KCN doctors' performance as well as in prioritizing the concern areas which the franchise team used for improving their future interventions and trainings with KCN doctors.

Conclusions: It is too often assumed that public health interventions with health care providers will succeed in changing medical practices. PSI determined that, this assumption needs to be checked in order to make mid-term corrections if necessary.

Experiment of using simulated patients/ Lot Quality Assurance Sampling was found successful in delivering the desired outcome and proved to be a cost and time effective survey too.

AB_179 DEMOGRAPHIC AND BIOLOGICAL CORRELATES OF HERPES SIMPLEX VIRUS TYPE-2 INFECTION AMONG MARRIED WOMEN IN INDIA

Purnima Madhivanan[1], K.arl Krupp[2], Varalakshmi Chandrasekaran[2], Chitra Karat[3], Anjali Arun[4], Jeffrey D. Klausner[5],
[1]School of Public Health, University of California, Berkeley, USA [2]Public Health Research Institute, CSI Holdsworth Memorial Hospital, Mysore, India [3]Department of Obstetrics & Gynecology, CSI Holdsworth Memorial Hospital, Mysore, India [4]Vikram Hospital, Mysore, India, 5San Francisco Department of Public Health

Background: There are no studies on the prevalence of herpes simplex virus-2 (HSV-2) antibodies among women in Mysore. This study describes the correlates of HSV-2 infection among women in Mysore.

Methods: A prospective cohort study was conducted among women aged 15-30 years, attending two reproductive health clinics in Mysore, India between October 2005 and December 2006. Eligible women were interviewed using a structured questionnaire; biological specimens were collected for detection and treatment of reproductive tract infections (RTI).

Results: Overall, 53.9% of the women had laboratory-diagnosed RTI. Nine percent had trichomoniasis (95% confidence interval [CI]: 8.6%-10.5%), 11% were seropositive for HSV-2 infection (CI: 9.4%-13.6). Bacterial vaginosis was diagnosed in 19% (CI: 16.6%-21.8%), and vaginal candidiasis in 30% (CI: 27.9%-33.9%). There were no cases of gonorrhea detected. Years of sexual activity (adjusted odds ratio [aOR], CI: 1.47, 1.01-2.13), less education (2.28, 1.42-3.64), having a partner who is an unskilled laborer (1.74, 1.06-2.88), not having children (2.76, 1.49-5.09) and trichomoniasis (3.46, 1.81-6.43) were independent predictors of HSV-2 infection. Being muslim by religion (0.22, 0.10-0.46) was protective for HSV-2 infection.

Conclusions: None of the women who were HSV-2-seropositive had ever received a diagnosis of genital herpes. Few infected participants had been previously diagnosed or treated for these infections. Undiagnosed RTI and HSV-2 infection are likely to contribute to ongoing HIV transmission among married women in India.

AB_117 NUTRITIONAL ASSESSMENT IN HIV INFECTED CHILDREN

Sugam Bhatnagar[1] , Meenakshi Bhattacharya[2]

[1] - Intern, [2] -Associate Professor, Department of Medicine Government Medical College & Hospital, Aurangabad, India

Background: Malnutrition is a frequent complication of infection in general and HIV/AIDS in particular. The effects of malnutrition include increased susceptibility to infection and growth retardation.

Methods: 40 patients under the age of 13 years were studied through the comprehensive evaluation of clinical history, detailed examination [for opportunistic infections (OI) and nutritional skin changes], anthropometry and dietary intake. The proforma was based on the guidelines of the National AIDS Control Organization (NACO). The study was carried out at the ART Clinic at the Government Medical College and Hospital, Aurangabad. The assessment of the subjects was carried out by the principal investigator and reassessed by a paediatrician. Medical records were referred to evaluate change in their condition.

Result: Out of the total of 40 patients, 20 were on Anti-retroviral therapy (ART) and 20 were yet to be initiated on ART (PreART group), as per NACO guidelines. 2 out of the 20 in PreART group showed weight gain while in the ART group 10 out of the 20 subjects showed weight gain. Out of the 20 patients in PreART group 13 patients had CD4 between 200 - 349 while 7 patients had CD4 above 350. Out of these 13 subjects, 6 subjects presented with an OI while 1 subject presented with an OI in the other PreART group.

Conclusion: It was observed that children on ART showed better weight gain than children not on ART..

AB_145 AN INTEGRATED MODEL FOR HIV CARE 5 YEAR EXPERIENCE FROM CENTRAL KERALA

Kidangazhiyathmana Ajithkumar[1], Bobby Abraham[2], Ramya[2], M A Raveendran[3]
[1]Dermatology, Medical College Trichur [2]ART Clinic Medical College Trichur [3]Department of Medicine Medical college Trichur

Background: Management of HIV demands various unique challenges before the health care delivery system. Trichur model of HIV care which was developed in central Kerala in 2002 tries to address these challenges within the limitations of existing health care delivery system and proves that it is [possible to successfully address this challenges.

Methods: A clinic was established in Trichur medical college in 2002 as a once a week drop in clinic which was expanded subsequently with the help of NACP to a full fledged care center integrated with the existing medical college. It slowly integrated Capacity building, personal protection, ethical issues, In patient and out patient service delivery (both medical and surgical) linkages with positive peoples peer groups, Non governmental organizations, public private partnerships with other institutions, adherence programs etc.

Results: At the end of 5 years there 2200 patients registered in this clinic, 900 on Antiretroviral therapy, with 95% adherence. The death rate of patients on ARV remained less than 10 %. We could also develop a model for retrieval of those lost to follow up. We could also develop models for waste disposal, personal protection, prevention of parent to child transmission (as low as 1%). All staff of the institution were trained in HIV and safe work practices. We could also involve in all important national debates on the issue and contribute productively to them.

Conclusion: It is possible to evolve a successful care delivery model for HIV /AIDS within the existing health care system.

AB_198 ESTABLISHING HEALTH SERVICES FOR FEMALE SEX WORKERS IN SOUTHERN MAHARASHTRA AND NORTHERN KARNATAKA- PREVENTION THROUGH PARTICIPATION

Mrunal Shetye[1], Prashant Deshpande[2], Vinoda Bavdekar[3], Pankajvinayak Sharma[4], Reynold Washington[6], Brian Gilligan[5]
[1]- Deputy Project Director Health Services, [2]- Regional Manager Health Services , [3]- Regional Manager Health Services [4]- Deputy Project Director Programming [5]- Project Director KHPT-Corridors, Pune India [6]-Director STI & Surveillance Project Sankalp, Deputy Chief of Party Samastha, Bangalore, India

Background: KHPT's Corridors HIV Prevention Project is implementing a focused HIV prevention programme for female sex workers (FSWs) in 3 northern districts of Karnataka and 3 southern districts of Maharashtra, with funding from the Bill & Melinda Gates Foundation's India AIDS Initiative (AVAHAN). These districts have an average ANC HIV prevalence of 3.17% (2005). The project provides free clinical services, peer-based outreach, condom promotion, and engages with the female sex worker communities to reduce their vulnerabilities, especially those associated with their high levels of migration. Although community members are vulnerable to STI/HIV infection, STI/HIV prevention and treatment services are often not perceived as a priority.

Methods: Discussions were held with communities to inform them of the risks of STI/HIV, and early and regular health seeking behaviour was agreed upon as a major way of reducing this risk. They were consulted on the location and timings of clinics, were a part of the clinical staff recruitment process, and were consulted on what services and referral should be provided. Community members were positioned in the clinics to increase comfort levels of service users. Clinic monitoring committees oversee clinic functioning and client satisfaction.

Results: Up to September 2007, for an estimated 17,946 FSWs, 139 static and outreach clinics (433 clinic days per month) have been established. Approximately 67% (11,707) of the FSWs have attended a clinic at least once and 25% (4,323) visit clinics regularly.

Conclusion: Community involvement in the establishment of clinical services and building their

capacities to take leading roles in service delivery ensure program ownership and service utilization

AB_204 "MISSING TARGETS IN HIV/ AIDS CONTROL". A QUALITATIVE STUDY IN A DISTRICT OF TAMILNADU

Asirvatham Edwin Sam
AMCHSS, SCTIMST

Background: Majority of the HIV/AIDS interventions in India are being carried out through the targeted interventions aimed at conventional high risk groups like commercial sex workers, truckers, men who have sex with men, migrants and intravenous drug users. But it has been well established that the infections have moved from high risk groups to general population. This raises the challenge to target all the groups in the community who indulge in unprotected high risk sexual practices besides the 'established' high risk groups.

Objectives: To analyze the high-risk sexual practices in the community and to identify the hitherto unidentified and untargeted groups with high risk sexual behavior and to assess the need for interventions.

Methodology: The study used qualitative research methods, which included 24 focus-group discussions with 17 different groups in the community to maximize the diversity of the participants.

Results & Discussion: Many occupational groups like construction workers, village industry workers, forest workers, and casual labourers etc. tend to indulge in high risk sexual practices and are not reached and targeted by the HIV control strategies. The study furthers finds that high risk sexual practices have become common, incidental and so un-planned. Consequently safer sexual practices are still being considered theoretical among majority of the groups. Besides, high risk sexual practices and high risk groups vary across regions and social groups. The study reiterates the need to reorient the targeted interventions, widen the scope of targets and to include locally relevant high risk groups in addition to the conventional high risk groups

AB_221 DELIVERING HIV PREVENTION SERVICES TO TRUCKERS : STRATEGIES, CHALLENGERS AND OUTCOME

Bhalchandra Kinikar[1], Mrunal Shetye[2]
[1]Kinikar Dental Clinic, [2]STI Consultant

Background: Niramaya Arogya Dham (NAD) in Solapur, Maharashtra started a STI/HIV prevention project with funding from MSACS started in November 2001 for truckers and commercial sex workers along National Highway No. 9 with the objective to increase the awareness levels of truckers and their sexual partners on STIs, HIV/AIDS and promote safe behavioural practises. Trucker's are at a risk of HIV/AIDS as many myths/misconceptions regarding sexual activities, health issues and condoms prevail among them.

Methods:

- Involvement of stakeholders to build rapport with the Truckers.
- Awareness activities with Peer Based approach.
- Establishment of STI Outreach Clinics along the highway at trucking stations.
- Delivery of services based on knowledge, attitude and practices of the targeted population.

Results: 36% reduction is observed amongst the target population of truckers in STD infections over a period of 6 years. (November 2001 to January 2007). This was possible because of the following activities of NAD.

- 53,666 Truckers contacted.
- 5,402 STI Cases were treated.
- 14, 79,495 Condoms were distributed.
- 21,282 condoms demonstrations done.
- 89,279 IEC materials were distributed.
- 14 Advocacy workshops were conducted for stakeholders.

Conclusions: Delivering health needs of Trucker population poses many challenges. Involvement of stakeholders, using peer based approach, assessing needs helps in establishing appropriate health delivery package for truckers.

In 2001 out of 10,039 contacts 2,510 were found to be afflicted cases (25%)

In 2007 out of 8,354 contacted 1336 were found to be afflicted cases (16%)

AB_42 THE INNOVATIVE, COMPREHENSIVE REVAMPING STRATEGIES TO COMBAT RE-EMERGENCE OF MALARIA IN THE URBAN SETTINGS OF MUMBAI

Minni Khetarpal, Arun Bamne, Kishor Hargoli
Municipal Corporation of Greater Mumbai, Public Health Department, Mumbai , India

Background: Mumbai having high population density is endemic for Malaria. Over last one decade there is a sudden change in pattern of Malaria. Mumbai witnessed the metamorphosis in form of expansion construction and redevelopment to follow the pattern of Shanghai. With boom in constructions and real estate there is proportionate rise in Malaria with influx of cheap labour from malaria prone states. This study looks at contributing factors beyond the routine epidemiological window causing the Malaria menace and strategies adapted for control.

Method: Data collection from Malaria surveillance department, Insecticide Officer, interview and physical inspection of major construction sites.

Results:

Year	No. of blood smears	Total Malaria Cases	Plasmodia Vivax	Falciparum	Mixed
2005	665502	13452	10240	2819	393
2006	671043	17826	14189	3113	524

Analysis of construction sites: 80% of the workers are from Jharkhand, Bihar, Uttar pradesh and West Bengal, predominant endemic area of Malaria. At these sites enormous breeding was seen due to construction activities and inhabitation of workers. No medical examination or prophylaxis for Malaria is done by builders. The Public health department has taken a proactive role in visiting all sites collecting blood smears and detecting all possible breeding spots for insecticide measures

Conclusion: The burden of Malaria in city is due to massive and unregulated construction activities, causing influx of cheap labour from Malaria-endemic states. The analysis indicates there is urgent need of policies for regulatory mechanism of physical examination and screening of workers, construction sites and remedial measures. Responsibility of Malaria Control at construction sites should be of builders.

AB_103 INTEGRATED DISEASE SUREVEILLANCE PROJECT (IDSP)

Amar Shah, K.R. Thankappan
AMCHSS, SCTIMST, Thiruvananthpuram

Background and objectives: Disease surveillance saves lives and money, by early detection of epidemics. IDSP is an integrated approach for the surveillance, implemented among all states of India. As the published information on functioning of IDSP was limited from any of the states, this study was undertaken in the state of Gujarat, with specific focus on malaria

Methods: Seventeen health facilities were selected from each of the two randomly selected districts. Data was collected using observatory checklist for health facilities, semi structured questionnaire, in-depth interviews for selected health staff and review of records.

Results: Electronic data reporting on weekly basis, consistent laboratory confirmation for malaria diagnosis at every level and weekly analysis of data were found in both districts. Timeliness and completeness of the reported data was 89% and 98% respectively. Combined score for Infrastructure on epidemic preparedness was 92%. Improved case finding and outbreak detection resulting in decrease in deaths was observed.

Involvement of Private sector was limited (3%). The written case management protocol for epidemic situation was not found at any health facility studied. Use of Geographic Information System (GIS) was not based on epidemiological data.

Conclusions: IDSP in the two districts studied has improved data collection resulting in early reporting and intervention for epidemic control. Even when the number of outbreaks increased in the state, number of deaths due to malaria has come down. There is still scope for increasing private participation, using GIS for epidemiological data and using written case management protocols.

AB_132 FACTORS AFFECTING PROMPT TREATMENT OF MALARIA IN A HIGH ENDEMIC DISTRICT OF ORISSA, INDIA

Ashis Das[1], T.K.S. Ravindran[2], Madan Pradhan[3]
[1]Public Health Resource Network, Orissa [2]AMCHSS, SCTIMST, Trivandrum [3]Department of Health & Family Welfare, Government of Orissa

Background: Malaria is one of the world's most important public health concerns. Orissa state contributes the maximum number of cases and deaths due to malaria in India. We tried to identify the factors affecting prompt treatment of malaria in a high endemic district of Orissa.

Methods: We interviewed 300 community members who had an episode of fever with chills within the previous two weeks through a pre-structured interview schedule. In-depth interviews and observations were carried out with the help of separate guidelines for the health care providers.

Results: During the last episode of fever with chills 55.7 % sought treatment from appropriate providers within 48 hours of onset of symptoms, 35.7 % had visited government health facility, 31.3 % to less than fully qualified practitioners and 24.3 % had been to community level health workers and volunteers. Distance of more than 10 kilometers from the provider was associated with not availing prompt treatment (OR 4.69, CI 1.27- 17.35, P=0.02). In-depth interviews of the providers pointed out underutilization of community based drug distribution centers (DDC) to be the major factor. The reasons for this included; drug side effects, suspicions about drug quality, and at times non-availability of drugs and negative attitude of the provider.

Conclusion: Immediate attention is needed to tackle underutilization of DDCs and not completing treatment following presumptive treatment in DDCs. Also there is a need of health education within the community, especially women and tribal people regarding transmission, symptom identification and preventive measures for malaria.

AB_229 CLIMATIC FACTORS AND INCREASING MALARIA TRANSMISSION IN KURSEONG, DARJEELING DISTRICT, WEST BENGAL, INDIA, 2000-2004

Sharma Puran K, Ramakrishnan R, Hutin Y, M D Gupte NIE, ICMR, Chennai, India

Background: In Kurseong, Malaria was a cause of concern but lack of relevant information deferred public health action. We analyzed surveillance data to estimate the burden, examine trends and explore the role of climatic factors.

Methods: We reviewed reports of laboratory confirmed Malaria cases by species and collected climatic records between 2000 and 2004. We calculated the annual parasite incidence (API) and the annual blood slide examination rate (ABER) that assessed case detection activities and the slide positivity rate (SPR) that assessed transmission trends. We conducted a linear regression analysis to predict the monthly incidence of malaria on the basis of the climatic variables.

Results: The API increased from 2 to 7.8 per 1000 population between 2000 and 2004. There were no reported deaths. The incidence of malaria was high among all age groups. The average 2000-2004 ABER was 4.8%. The proportion of Plasmodium falciparum increased from 62% in 2000 to 78% in 2004 with 50% chloroquine resistance. The SPR increased from 8.1% in 2000 to 12% in 2004. Annual rainfall increased from 3,035 mm in 2000 to 4,831 in 2003. The regression analysis indicated that minimum temperature (p-value 0.03) and morning humidity (p-value 0.02) were positively correlated with malaria incidence while evening humidity (p-value 0.01) was negatively correlated.

Conclusion: Malaria transmission increased over the years. The increasing proportion of Plasmodium falciparum aggravated the situation. Changing climatic conditions may have contributed to this emergence. We recommended increasing case detection and introduced artemesinin-based combination therapy to treat Plasmodium falciparum patients.

AB_230 LACK OF ACCESS TO PUBLIC HEALTH CARE, SHIFT TOWARDS UN-QUALIFIED PRIVATE PROVIDERS AND MALARIA DEATHS: ALIPURDUAR, JALPAIGURI DISTRICT, WEST BENGAL, 2006

Sharma Puran K[1], Sen T K[2], Ramakrishnan R[1], Hutin Y[3], M D Gupte[1]
[1]NIE, ICMR, Chennai, India [2]West Bengal Health Services, WB, India [3]WHO advisor, Chennai, India

Background: Jalpaiguri district accounts for 60% and 50% of West Bengal's malaria case load and deaths due to malaria, respectively. In 2006, we investigated an increase in malaria deaths in Alipurduar to identify contributing factors and formulate recommendations.

Methods: We searched hospitals for deaths following fever with a blood smear positive for Plasmodium falciparum. We reviewed treatment records and interviewed relatives regarding management history. We evaluated the malaria prevention and management activities in the public and private sectors through provider interviews and record reviews.

Results: 93% (77/83) deaths occurred in hospital. The median duration of illness was four days. 78% of hospital deaths occurred in the 24 hours following admission of patients. Of 60 family respondents interviewed, 70% reported that the patients had received care from unqualified private practitioners that were available round the clock. Of 100 unqualified private practitioners assessed, 21% knew anti-malarial dosage and 7% knew severity criteria for malaria. There were 65% and 42% vacancies among 240 health workers and 12 microscopist positions, respectively, in the public sector. As a result, the mean interval between community case search was 35 days and the mean time between blood slide collection and examination was 15 days.

Conclusion: Deficiencies in the public health care system may have led to a shift towards unqualified private practitioners leading to poor management of malaria, which may have contributed to deaths. Following this investigation, health authorities posted additional health workers and laboratory technicians to restore appropriate management of malaria in the public sector

AB_45 URGENT NEED OF REVISITING REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME (RNTCP) FOR POLICIES, STRATEGIES AND ITS IMPLEMENTATION FOR MDR-TB IN MUMBAI.

Arun Bamne, Minni Khetarpal, Jairaj Thanekar
Municipal Corporation of Greater Mumbai, Public Health Department, Mumbai, India

Background: RNTCP was built on infrastructure and strengths of National Tuberculosis Programme with aim to control Tuberculosis. However RNTCP does not have armory in its gamut to deal with most critical and important issues like MDR-TB, unregulated market of Anti-TB drugs, unethical prescription practices.

Every Sputum Positive case needs to be diagnosed and treated completely. However if there is no sputum conversion or no response to treatment as in MDR-TB the case holding becomes poor, challenging the credibility of RNTCP.

Objectives: This study looks at MDR-TB in Mumbai in absence of any structured data, surveillance network, lack of reliable prevalence studies and its impact on RNTCP.

Methodology: Data was collected for the year 2006 from TB department of 4 Medical colleges, District TB Register (DTR) of 23 Tuberculosis Unit (TUs), 2 major private laboratories and the study by Foundation for Medical Research(FMR).

Results: Mumbai has 25464 TB cases, 1.8% of India and 18.3% of Maharashtra's case load. DTR showed 5914 Re-treatment cases, 701 deaths and 486 failures, contributing 27.9% of total cases, an indirect evidence of MDR-TB. MDR-TB cases at 4 Medical colleges are 806, not covered under RNTCP proportionately are 3.2%. FMR study indicates 25% primary drug resistance. MDR-TB Reports by Metropolis laboratory is 55.6% and Hinduja Hospital is 51%.

Conclusion: MDR-TB is small component of RNTCP, however for Mumbai it has major public health implications. There is urgent need to provide facilities for diagnosis and treatment of MDR-TB and undertake molecular epidemiological studies to understand transmission dynamics of MDR-TB by revisiting RNTCP policies on priority basis.

AB_55 CAPACITY BUILDING OF DOTS PROVIDERS IS NEED TO ENSURE THE SAFETY OF SMOKING TB PATIENTS

A S Pradeep Kumar[1], C.U. Thresia[1], K R Thankappan[1], Mark Nichter[2]

[1]Achutha Menon Centre for Health Science Studies, SCTIMST, Kerala, India [2]Professor of Anthropology, University of Arizona, USA

Background: Even though tobacco use is associated with higher morbidity and mortality of tuberculosis (TB) patients, tobacco use prevalence among TB patients has not been reported from India. Objective of this study was to document smoking patterns among TB patients at different time points and quit smoking advice received by them and to identify predictors of smoking relapse.

Methods: Using stratified random sampling, 215 TB patients were selected from two districts of Kerala. Information on demographics, disease status, tobacco use behavior and cessation advice was collected using a pre-tested semi structured interview schedule and the data were analyzed by using SPSS.

Results: At six months before the diagnosis of TB, 94.4% were ever smokers and 71.2% were current smokers. Even though nearly 87% quit by one week after diagnosis 30% had relapsed by the time of six months after completion of treatment. Only about two thirds of smokers got advice from primary health centre physicians and less than half of them from other health professionals. Content analysis of advices showed that only about half of them got TB specific advices and others got only short instructions or orders to quit. Quit rate was significantly lower with higher level of smoking (OR 8.0, CI 2.07 - 30.86) and relapse rate was significantly higher with non health staff DOTS provider (OR 2.4, CI 1.09 - 5.43).

Conclusion: Special care of smoking TB patients is needed to prevent relapse and to ensure treatment compliance. Motivated DOTS providers are good resources to promote smoking cessation.

AB_78 KNOWLEDGE AND ATTITUDE TOWARDS DOTS AMONG JUNIOR DOCTORS IN MEDICAL COLLEGE HOSPITAL, THIRUVANANTHAPURAM.

Anish T.S.[1], Sanu Sain[2] Saritha L[2], Saritha K R[2], Shajahan Rabu Mole[2]

[1]Department of Community Medicine, Medical College, Thiruvananthapuram, Kerala, India [2]Medical student, 2003 MBBS batch, Medical College, Thiruvananthapuram, Kerala, India

Introduction: Tuberculosis kills more adults in India, than any other infectious disease. More than 1000 people a day - one every minute - die of TB in our country. More than 40% of adults are infected with TB, and approximately 1.5 million cases are put on treatment every year. An estimated 5 lakh deaths from TB occur every year. We have taken junior doctors as our study population because they are the key stake holders of the future of the nation in this regard. One of the hurdles the program is facing now is the confusions with in the academic community itself. A lot of the physicians follow the conventional methods to treat Tuberculosis rather than DOTS.

Study Objectives: (1)To assess the knowledge and attitude towards DOTS among junior doctors.(2)To know whether training or experience of initiation of DOTS has any impact on the knowledge and attitude.

Methodology: Study setting - Medical College Hospital, Thiruvananthapuram, Kerala.

Study population - House Surgeons and Postgraduate medical Students.

Sample size: 70 (44 House surgeons and 26 Postgraduates)

Study design : Cross sectional study

Results: Both house surgeons and post graduate medical students have good knowledge of TB. No significant difference in knowledge between the two categories.

The junior doctors posses a negative attitude towards DOTS. No significant difference in attitude between house surgeons and post graduate medical students. p value = 0.031 (< 0.05). Knowledge is found is be much better in those who received training on DOTS and the difference is statistically significant.[p value =

0.268(>0.05)]. But the difference in attitude is not significant statistically.

Initiation of TB treatment (DOTS) significantly improves the knowledge about DOTS. p value = 0.47 (>0.05), but this does not significantly improve the knowledge about DOTS.

Discussion: 1. Knowledge on DOTS was found to be good among junior doctors. However the attitude of junior doctors towards DOTS is alarmingly low.

2. Knowledge and attitude towards DOTS were nearly the same among house surgeons and post graduate students.

3. Training and initiation of TB treatment had little impact on the attitude of junior doctors.

AB_98 OPERATIONS RESEARCH TOWARDS UNIVERSAL ACCESS TO TUBERCULOSIS CARE - AN EXAMPLE FROM PIMPRI CHINCHWAD MUNICIPAL CORPORATION (PCMC), MAHARASHTRA

Vinita Datye[1], Anagha Pradhan[1], Kishor Khilare[2], Sameer Pawar[1], Madhuri Mankar[1], John Porter[3]
[1]The Centre for Health Research And Development, The Maharashtra Association Of Anthropological Science [2]City Tuberculosis Control Society, Talera Hospital, Pimpri Chinchwad Municipal Corporation, India [3]Health Policy Unit, London School of Hygiene and Tropical Medicine, London, UK

Background: Recognizing patients' preference for the private health care sector, the Revised National Tuberculosis Programme (RNTCP) initiated the Public-Private Mix (PPM). The City Tuberculosis Control Society (CTCS) of Pimpri Chinchwad Municipal Corporation has involved Private Practitioners (PP) in the PPM since 1998. Further, the programme used operations research to review the PPs' participation and find ways to increase the flow of patients from the private sector to the RNTCP.

Methods: The CTCS, in collaboration with an NGO, undertook two research studies using semi-structured interview schedules.

Findings: A study among 117 patients in 2004 showed that PPs participating in the PPM were more likely to suspect patients and refer them earlier to the RNTCP. Recognizing the need to involve more PPs and increase referral of private sector patients, an intervention research study was initiated in 2006 to document the enablers and barriers to PPs' participation in the PPM. This showed that while most PPs referred patients to the programme for investigations and / or treatment, only a fourth received feedback regarding their referred patients. PPs' expectations for participation in the PPM included feedback regarding referred patients and increased interaction with the programme. The CTCS responded by organizing meetings with PPs for addressing their concerns regarding the partnership while simultaneously developing an intervention for strengthening the referral system.

Conclusion: The use of operations research by a local programme to identify and respond to the private sector's needs in order to increase and sustain their participation is a key step towards evidence-based programmes.

AB_188 URBAN TB CONTROL PROGRAM OF BRAC IN BANGLADESH: "THE CHALLENGES"

Farhana Sultana[1], Shahaduz Zaman[1], Md. Akramul Islam[2], Faruque Ahmed[2]
[1]James P Grant School of Public Health, BRAC University, 69 Mohakhali, Dhaka, Bangladesh [2]BRAC, 75 Mohakhali, Dhaka, Bangladesh

Background: Bangladesh has the fifth highest burden of tuberculosis among all nations. With successful outcome of TB program in rural areas BRAC replicate the Shashtho Shebika (SS) model (Community Health Volunteers) in urban areas in 2002. However, blanket application of this strategy in the urban areas has posed numerous challenges for the program. Addressing these issues a consecutive three-phase operations research programme is initiated in urban areas to reveal the challenges from the patients' and providers' perspective and ultimately to recommend a model for the urban areas.

Methods-Design: The qualitative study was conducted in 20 district towns and 6 peri-urban areas. In-depth interviews of 52 TB patients and their families including 78 providers were done. 18 case studies of patients focused on the non-adherence factors.

Results/Outcomes: There was a delay in health seeking and patients visited multiple providers before BRAC. Pharmacies were the first point of contact. Community perspective regarding TB and its treatment was poor. Side-effects related to TB were a prime reason for non-adherence. The SSs faced challenges selling their

medicine due to the tough competition in the local market. Persistent situation de-motivated SSs who involved herself in part time income generating activities thereby hindering her activity in TB program. Social problem included differences in social status and non-acceptance in urban community including lack of accessibility to flats and apartments. The life style and the program approach contradicted each other. Apart from this workload, multiple responsibilities and staff shortage were another aspect of the problem.

Conclusions: A new strategy, the 'Segmented Approach' is proposed considering the potential factors in urban areas that will be piloted, monitored and evaluated during a course of time based on certain indicators.

AB_89 POOR VACCINE COVERAGE CONTINUES TO CAUSE MEASLES OUT-BREAK IN PURULIA DISTRICT, WEST BENGAL, INDIA, 2006

Prasun Das[1], Asit Biswas[2], R Ramakrishnan[1],Yvan Hutin[1], M D Gupte[1]
[1]National Institute of Epidemiology, Chennai, India,
[2]Department of Health and Family Welfare, Government of West Bengal, India

Background: In India, the measles vaccine coverage was 56% during 2003 with a wide variation between 10% - 90% in different states. Purulia district reported three measles outbreak during 2005-06 (2005 coverage: 75%). On 25th April, 2006 a cluster of measles in Nutandih village was notified causing two deaths in one family. We investigated the outbreak to identify the distribution and determinants and formulate recommendations.

Methods: Our cases at Nutandih village from 15th February to 15th June, 2006, meet the WHO case definition. We conducted door to door active search for cases. We collected information on demography, date of onset, immunization coverage and outcome. Serums from five children were collected for laboratory confirmation. We conducted a retrospective cohort study among 9 to 120 months children. Our null hypothesis was measles vaccine did not protect from measles.

Results: On April 2nd, 2006, the outbreak was at its peak. Attack rate was 10% and highest between 13-24 months age. Case fatality rate 5%, Vaccination coverage 32%. Vitamin A treatment was given to all children up to 120 months age. Attack rate of measles among vaccinated and non-vaccinated children were 4% and 25% respectively (chi square 33.9, $p<0.00001$). Vaccine efficacy estimated 86%. Laboratory report confirms measles IgM in one out of two samples examined.

Conclusions: Measles outbreak in Nutandih was due to poor vaccine coverage. We recommended improved delivery of immunization services and community awareness through health education. We also advised to conduct training on measles case management to prevent high case fatality.

AB_137 GROSS UNDER-REPORTING BY SURVEILLANCE SYSTEM HAMPERS CONTROL OF ACUTE RESPIRATORY TRACT INFECTIONS IN UNDER-5 CHIL-DREN IN SOUTH 24-PARGANAS, WEST BENGAL, INDIA, 2006.

Sharmistha Mitra FETP scholar, R. Ramakrishnan Faculty, Shyamali Rudra FETP scholar
National Institute of Epidemiology, Chennai, India

Background: Every year 3.9 million deaths world-wide occur due to Acute Respiratory Tract Infection (ARI). India, Bangladesh, Indonesia and Nepal together account for 40% of global ARI mortality. In West Bengal 3.45% of major causes of hospitalization is ARI, with mortality of 6.4%.

In South 24-Parganas district, reported incidence is 2%.

Methods: We described and evaluated the surveillance system against standard attributes. We collected data through interview of public health officers and review of records. We undertook one cross-sectional study and one health worker survey in two blocks of South 24-Parganas. To identify cases we used the WHO case definition.

Results: Description of the system: All primary health centres and sub-centres send reports of their passive surveillance to blocks. Blocks send compiled report to district, which forwards it to state.
Evaluation of the system: 67% health workers are trained, 80% supervised, 94% do not know definition

of ARI. Sensitivity of the system was 50%. Though health workers admit that the reporting system was simple, 60% of them reported regularly. Positive predictive value was 75% with the health workers able to diagnose only the upper respiratory tract infections. 30% of people going to private clinic are not covered by this system.

Conclusion: The surveillance system does not cover the whole population. The system has a good framework and is well documentation. But no analysis and interpretation of data is undertaken upto district level. So we recommend 1)Active data collection, 2)Data collection from private clinics, 3)Data analysis by time, place and persons.

AB_143 DEALING WITH AN EMERGING DISEASE IN A RESOURCE POOR SETTING, ORISSA STATE, INDIA

Madan Mohan Pradhan[1], Ashis Das[2]
[1]Department of Health & Family Welfare, Govt. of Orissa [2]Public Health Resource Network, Orissa

Background: The Indian health system has been challenged thoroughly by the re-emergence of the arboviral disease Chikungunya after a gap of twenty years. This paper attempts to review the activities undertaken by the state Health Department of Orissa state to combat the disease and suggest measures to improve the capacities to tackle such situations created by an emerging disease.

Methodology: We reviewed the records available in the State Disease Surveillance and National Vector Borne Diseases Control (NVBDCP) cell from February 2006 to August 2007 and interviewed the program officers of vector borne diseases control programme at state and concerned districts about the remedial measures they undertook.

Results: Total 9000 people were affected with suspected chikungunya in the state during Feb 2006 to September 2007 spreading over to ten districts. Though the state contributes to the maximum number of cases and deaths due to malaria in the country and it has an NVBDCP cell, the necessary resources and technical skills were not adequate to deal with the situation. There is no entomological expertise with state to study the details about the vector behavior. Since there is no virological laboratory in the state, serum samples were sent to a laboratory outside the state, which resulted in delays to take appropriate action.

Conclusion: In a resource poor state, which is traditionally grappling with vector borne diseases like malaria and filaria, another vector borne disease like Chikungunya becomes an additional burden. States like Orissa need resource and technical support to meet the challenges brought upon by an emerging disease like Chikungunya.

AB_155 ANALYSIS OF SURVEILLANCE DATA OF A DISTRICT DETECTS A RISING TREND OF ENTERIC FEVER : A FINDING RELEVANT FOR LOCAL HEALTH MANAGERS; SOUTH-24 PARGANAS, WEST BENGAL, INDIA, SEPTEMBER-2007

Dipankar Maji[1], T.Sen[2], R. Ramkrishnan[1], A.Brahma[2], S.Sarkar[3], S.Sharma[3]
[1]N.I.E., Chennai, India [2]Dept. of Health & F.W., Govt. of West Bengal, Calcutta, India; [3]Office of the C.M.O.H., South-24 Parganas District, Govt. of West Bengal, Calcutta, India

Introduction: Incidence of diarrhoeal diseases declined by 48.8% in South-24 Parganas during 2001-2006. Enteric fever is another disease-group with faeco-oral transmission. We analyzed surveillance data of government hospitals to determine the trend of enteric fever.

Methodology: We made projection(s) for midyear populations. We projected the incidence for the remaining months of 2007. We compared the variation in incidence of enteric fever with that of viral hepatitis to determine any change in activeness of reporting.

Result: Notwithstanding decreases in 2003 and 2006, annual incidence rate of enteric fever increased over-all by 1.72 times from 2001 to 2006 and by 2.83 times in 2007 (projected). Improved completeness of reporting could account for 75.6% of the rise over 2006 to 2007 (projected). Variation in incidence by month between 2004-'05 and 2005-'06 were dissimilar for enteric fever and viral hepatitis. Nineteen of 29 block hospitals reported enteric fever. They did not have their own laboratory facility.

Conclusion: Enteric fever showed a rising trend in the district unlike diarrhoeal diseases. The rise was neither

due to increased activeness of reporting nor only due to better reporting completeness. Estimation of incidence rates with only institutional cases was a limitation. Also, the suspected and confirmed cases were not segregated.

On the basis of the analysis we recommended provision of investigation facility, improvement of quality of reporting and analysis of available data, by utilizing the inputs of Integrated Disease Surveillance Programme. A study should also be undertaken to identify the causes of the rise of enteric fever.

AB_169 A STUDY ON THE PREVALANCE AND INTENSITY OF SOIL TRANSMITTED HELMINTHES (STH) IN MCD SCHOOL CHILDREN

S. Ranjan[1], S.J. Passi[2], S. N. Singh[3],
[1]-Research Scholar, [2]-Reader in Nutrition Department of Foods and Nutrition, Institute of Home Economics, University of Delhi, F-4 Hauz Khas Enclave, New Delhi -110 016 [3]- Scientist E. Defence Institute of Physiology and Allied Sciences, Timar Pur, New Delhi.

Background: Soil transmitted Helminthes (STH) are common among poverty groups where sanitation is inadequate / awareness is lacking; and India is no exception to this. The objective was to determine the prevalence / intensity of STHs in select MCD schools of Delhi.

Methods: 347 children studying in class I - IV (aged 5-13 years) were enrolled from three MCD schools located in urban slums / rural areas of Delhi (Civil Lines Zone). Data were gathered on their socio-demographic profile with emphasis on household crowding / defecation practices; the stools samples were examined by Kato-Katz Technique for the presence / concentration of STH eggs.

Results: Overall prevalence of Ascaris lumbricoides, Trichuris trichiura and Hookworm was 12.4%, 6.3% and 6.3% respectively; while eggs of Enterobious vermicularis and Hymenolepis nana were also found in the stool samples. The prevalence of worm infection was higher among the rural than the urban subjects; and the children from rural areas had a higher prevalence of mixed infections and a higher egg concentration. None of them had heavy infection. Further, younger children had a higher prevalence of infection than the older ones. Also, infection rate was higher in children from crowded houses (constrained living conditions) and amongst those using public flush toilets or defecating in the open.

Conclusion: The study points to the poor hygiene / sanitation practices prevalent in urban slums / rural areas even in the capital, Delhi, indicating an urgent need for prompt action so as to save the children from its deliberating consequences.

AB_232 POOR KNOWLEDGE OF HEALTH WORKERS IS AN OBSTACLE TO LEPROSY DEFORMITY PREVENTION, SOUTH 24-PARGANAS DISTRICT, WEST BENGAL, INDIA, 2006

Shyamali Rudra[1], Ramakrishnan R[1], Hutin Y[2], Gupte MD[1], Sanyal H[3]
[1]NIE, ICMR, Chennai [2]WHO advisor, Chennai, India [3]District leprosy officer, South24Parganas, West Bengal

Background: In 2003, West Bengal integrated leprosy control in general health services. In South 24 Parganas district, prevalence remained low but deformity among new detected cases remained high.

Methods: We evaluated the programme in rural areas in terms of input, process, output and outcome indicators of key elements (detection, treatment, awareness and deformity prevention). We interviewed health workers and patients in two of 29 blocks. We sampled 30 clusters of seven individuals above 14 years of age in community to attempt to interview 210 individuals using pre-tested questionnaire.

Results: After integration, annual case detection fell from 1.2 per 10,000 in 2002-3 to 0.4 per 10,000 in 2006-7. 18% of 1,068 health-workers received training after integration and 72% of 69 surveyed knew diagnostic criteria. 26 % of 69 surveyed health-workers knew how to diagnose reaction and to administer self-care for disability and anesthesia. Out of 24 patients with anesthesia, 50% practiced correct self care, but only 25% used protective equipment at work. The district spent 20% of programme fund for leprosy awareness. Of 203 population interviewed, 29% knew symptoms of leprosy, 75% knew it was curable and

74% knew it would evolve towards deformity if untreated.

Conclusion: The district maintained a low case detection after integration. However, knowledge of symptoms is low in community. Knowledge of health-worker regarding diagnosis and management of reaction, anesthesia and disability was poor. We recommended focusing health education on the symptoms of leprosy and building capacity of health-workers to manage and prevent deformities.

AB_233 A CHOLERA OUTBREAK IN A VILLAGE OF WEST BENGAL, INDIA, 2006: THE DANGER OF USING PONDS FOR SOILED CLOTHES DISPOSAL

Shyamali Rudra[1], Ramakrishnan R[1], Hutin Y[2], Gupte MD[1]
[1]NIE, ICMR, Chennai, India [2]WHO Advisor, Chennai, India

Background: We investigated an outbreak in December, 2006 in a village to identify risk factors and propose recommendations.

Methods: We actively searched for cases with three or more loose stools within 24-hours during November-December, 2006 in Pipulhat village. We described the outbreak. We compared each case with two age-matched neighborhood controls for demographic factors and hygienic practices. We calculated matched odds ratio (MOR), confidence intervals (CI) and population attributable fractions (PAF). We collected rectal swabs and water specimen for microbiological studies.

Results: We identified 32 cases (median age: 22 years) with one death (Attack rate: 5.1%, case-fatality: 3.1%). Laboratory isolated Vibrio cholerae O1 from 2 of 3 rectal swabs. Attack rate was highest among 0-4 years (7.4%). Starting from 25 November, cases peaked on 1 December and decreased to pre-outbreak level on 4 December. Cases clustered around pond and tube well situated on its bank. Bathing in the pond (MOR: 3.5, 95% CI: 1.2-10, PAF: 56%) or drinking water from the tube well (MOR: 3.0, 95% CI: 0.98- 8.9) was associated with cholera. Villagers disposed soiled linens of expired patient and washed soiled clothes of patients in the pond. The pond and the tube well had fecal contamination.

Conclusions: Soiled linens contaminated the pond that contaminated an improperly located and maintained tube well. Swallowing of contaminated water during bathing in pond might have also contributed in spread of outbreak. We recommended restricting use of pond water, adopting household safe-water practices and shifting tube well away from the pond.

AB_236 POOR DATA TRANSMISSION LIMITED OUTBREAK DETECTION IN URBAN AREAS OF THE "NORTH 24 PARGANAS" DISTRICT, INDIA, 2006-2007

Rama Bhunia[1], Hutin Y[2], Ramakrishnan R[1], Sen TK[3], Gupte MD1
[1]NIE, ICMR, Chennai, India [2]WHO advisor, Chennai, India [3]West Bengal Health Services, WB, India

Background: Urban areas of the "North 24 Parganas" district, West Bengal are densely populated and outbreak-prone. We evaluated the capacity of surveillance to detect diarrhea, fever and jaundice outbreaks in three of the 27 administrative health units.

Methods: We used the weekly average of diarrhea, fever and jaundice cases per 5000 populations (2003-2005 district data) with adding two standard deviation as outbreak threshold and counted outbreaks per week. Outbreaks reported was number of outbreaks reported to the district health authority and outbreak captured was no of outbreaks detected at the smallest urban unit .We assessed sensitivity , simplicity and representativeness, timeliness (median time interval between outbreak occurrence and notification to the district).

Results: Health workers collected data on diarrhea, fever and jaundice cases in peripheral urban health center. They send this information for all age group to the higher level using hand written format. The system

detected two (0.008%) out of 247 diarrhea outbreaks and none of the 430 fever and 60 jaundice outbreaks for populations 1,15,000. Timeliness for the outbreaks detected from the survey areas were nil but the district reported data showed the median time interval was three days.

Conclusions: Poor data transmission from urban administrative units restricted the capacity of the system to detect outbreaks. We recommended weekly routine transmission of data generated for diarrhea, fever and jaundice in urban areas to the district health authority.

AB_237 CUTANEOUS ANTHRAX OUTBREAK IN A VILLAGE OF WEST BENGAL, INDIA, 2007: THE DANGER OF UNSAFE HANDLING OF INFECTED COW MEAT

Tapas Kumar Ray, Murhekar MV, Gupte MD
NIE, ICMR, Chennai, India

Background: Following slaughtering of an ill cow on 2nd June 2007, a cluster of suspected cutaneous anthrax was reported in Kushaberia village of Murshidabad, West Bengal. We investigated this cluster to identify the agent, mode of transmission and formulate recommendations for prevention.

Methods: We defined a suspected anthrax as occurrence of characteristic papule or vesicle with or without eschar formation in a resident of affected village during 1st-13th June 2007 and searched for cases door to door. We described the outbreak. We collected vesicular fluid from the skin lesions for microscopic examination and culture for Bacillus anthracis. We compared cases with unaffected household member of case-patients for exposure to the slaughtered animal while slaughtering, handling the raw meat and consumption of cooked meat. We calculated odds ratio (OR), 95% confidence intervals (CI) and population attributable fraction (PAF).

Results: We identified 45 case-patients of anthrax among 361 villagers with two deaths (Attack rate: 13%; Case fatality rate: 4%). We identified B. anthracis in 5 patients and isolated the organisms from 2 patients. Attack rates were higher among individuals aged 15-45 years (21/190, 11%) and females (24/171, 14%). We identified slaughtering the cow (OR = 49, 95% CI: 16 - 156; PAR: 44%) and handling raw meat (OR: 3, 95% CI:2 - 6; PAF: 38%) as risk factors.

Conclusions: The outbreak was associated with exposure to slaughtered animal meat. We educated villagers for not slaughtering ill animals and using personal protective measures while slaughtering or handling the raw meat.

AB_238 AN OUTBREAK OF RUBELLA IN A HILLY DISTRICT OF CHAMBA, HIMACHAL PRADESH, INDIA, 2006

Surender Nikhil Gupta[1], Ramachandran V[1], Sundaramoorthy L[1], Naveen Gupta[2], Gupte MD[1]
[1]NIE, ICMR,Chennai, India [2] Shimla, Himachal Pradesh

Background: On 5th November, 2006, a local community leader reported cases of fever with rash in three villages of Chamba district. We investigated this cluster to identify the agent and formulate recommendations for prevention.

Methods: We defined case as occurrence of fever with rash in any resident of these three villages during 20th October to 9th December, 2006. We collected information on age, sex, residence, date of onset, symptoms, traveling history, vaccination status and pregnancy status. We described the outbreak by time, place and person. We collected sera samples for IgM antibodies to measles and rubella viruses.

Results: We identified 61 cases in three villages (39 in Hattli, 5 in Dramman and 17 in Thulel) with an overall attack rate of 8.7%. Males had a higher attack rate (10%) as compared to females (7%). All case patients aged below 20 years (Median: 12 years). The index case which occurred on 20th October 2006 was from Hattli Bengali slum. The number of cases peaked on 19th November. No pregnant woman was found to be affected with no death reported. Of the 61 case-patients, 50 were immunized against measles. Of the six blood samples tested, all tested negative for measles IgM antibodies but four tested positive for rubella antibodies.

Conclusion: An outbreak of rubella was confirmed. We advised the local health authorities to provide MMR vaccination to the unexposed in three affected and neighboring villages

SEXUAL AND REPRODUCTIVE HEALTH ISSUES

AB_49 INVESTING IN WOMEN'S HEALTH: THE NEED FOR EDUCATION

Pratibha Singh
Department of community outreach,Baptist Christian Hospital, Tezpur, Assam

Uttarakhand (UA) is a state in northern India with 11 of its 13 districts having mountainous terrain. This poses a threat to service delivery and is a challenge in the provision of continuum of care.

Objectives: To list the delivery care options available to women in UA

To examine the outcomes of maternal well being in relation to the various options of care available

To identify the factors which influence these outcomes

Methodology: Available secondary data from the RCH I and II rapid household surveys undertaken in 1997 and 1999 was used. The data for the districts of Uttarakhand was analysed to look at pregnancy outcomes in relation to the nature of care provision during the ante partum period. Maternal morbidity was also examined using the same data source consisting of sample of 4166 women, to provide a representative sample for studying reproductive health experiences in the ten districts of Uttarakhand1.

Results: Data was analyzed only for the women who had delivered in the four years preceding the survey. Literacy for women ranged from a low of 29 percent in Hardwar district to 64.3 percent in Pauri Garhwal , literacy of the respondents for the whole state was 44.40 percent this figure masks the difference across districts. On an average 30-35 % of the women received an antenatal check up in each of the districts. A majority of the deliveries in the all the districts took place at home and were conducted by untrained TBAs. Institutional deliveries most often occurred in a government hospital or centre.

Regression analysis: A multivariate logistic regression analysis of only those variables found significant in the chi-square analysis was undertaken to determine the factors affecting ANC, delivery care and outcomes of delivery. We used different model specifications to identify these factors.

Model I- Literacy with ANC- Across the districts literacy had a significant effect on whether a woman received ANC or not (p value$<$0.01,OR$>$1). Literate women were more likely to seek ANC.

Model II- Whether a woman had skilled attendance at birth was again determined by her literacy status and whether she had an ANC check up (P value$<$0.01, OR$>$1).

Model III- Experience of health problems one week after delivery depended the type of attendance at birth and whether the woman had ANC or not (Pvalue$>$0.01).

Model IV - literacy also affected the place of delivery. The women who were literate were more likely to deliver in a place with skilled attendance than those who were not

Conclusion: Literacy is an important determinant of health care seeking during pregnancy, place of delivery and the type of attendance at birth. This affects the outcomes for maternal health.

Recommendations: To see a reduction in maternal mortality and morbidity it is imperative that policy makers and program designers invest in women's education. Even though the overall literacy levels in UA(71.6%,M=83.3%, 59.6%) are better than that of UP (Total56.3%,M=68.8%, F=42.3%), there is a wide gender gap in literacy and therefore these gaps need to be bridged.

The results may not be immediately visible however in the long term benefits for MCH and the health of the family, it is worth investing for.

AB_57 HYSTERECTOMY - A NEGLECTED ISSUE IN REPRODUCTIVE HEALTH CARE FROM A GENDER PERSPECTIVE

Yelavarthi Rama Padma
Indian Institute of Health & Family Welfare, Hyderabad, India

Background: Following post ICPD, major shift to extend quality of services to entire reproductive health needs throughout the life cycle with gender sensitivity was reiterated in all programmes. Despite the Government's decision, at many health centers the major focus is on maternal and child health services and it is equated to gendered health care. Improper attention to overall reproductive health problems and absence of gender sensitivity is leading to hysterectomy. The present paper focuses on processes and determinants of Hysterectomy.

Method: The study was carried out in 11 villages; a majority of them were situated in close proximity to a Round the Clock Women Health Center. In these villages 15 percent of the women, (N=502) in reproductive age group had hysterectomy. Apart from using structured interview schedules, focus group discussions and In-depth interviews were the main tools used for obtaining data.

Results and Conclusion: Logistic regression analysis identified several non-medical factors such as illiteracy, work status, religion, caste, tubectomy, parity as significantly associated with gynaecological/ reproductive illnesses leading to hysterectomy. The processes that lead to Hysterectomy are low perceived need for gynaecological/reproductive health care, delay in seeking health care in initial stages of illness, 'expected' gendered behaviour, absenteeism and rude behaviour of the public health workers, misleading quacks, and induced notions about an association between tubectomy and hysterectomy. Gender insensitive attitude of the family and health care providers compounds women's reproductive ill health, hence leading to unnecessary hysterectomy. Despite Government's intention to provide complete reproductive health care, it remains more in rhetoric than reality.

AB_60 FACTORS INFLUENCING THE HEALTH SEEKING BEHAVIOR OF PEOPLE WITH GENDER IDENTITY DISORDER: A COMMUNITY BASED DESCRIPTIVE STUDY

Prasanna Samuel[1], Ravikar Ralph[2]
[1]Department of Community Health, Christian Medical College, Vellore, India [2]Department of Biostatistics, Christian Medical College, Vellore, India

Background: Research on people with Gender Identity Disorder (GID) in India is scarce. The health and other needs of this vulnerable group remain unexplored. This study aimed to document the perspectives of people with GID on access to health care services and to identify key barriers to access that result in marginalization.

Methods: A snowball sampling method was used where the people with GID interviewed were asked to pass on information on the research to others. Three data collection methods were used: (1) a quantitative survey; (2) in depth interview and (3) focus group discussions.

Result: We administered questionnaires to 15 consenting people with GID and conducted a focus group discussion but only one consented to in-depth interviews. Respondents' highlighted the lack of accessible information on their condition; lack of knowledge, insensitivity and hostility among health professionals and societies marginalization as causing psychological distress.

Discussion: This small survey revealed that people with GID encounter significant difficulties in accessing appropriate health care. Social stigma, disrespect and discrimination are constant barriers to health care access of people with GID who participated in these focus groups and in depth interview. Equity in accessing health care should be considered a basic human rights issue irrespective of gender identity.

AB_93 SEXUAL ABUSE AMONG CHILDREN IN INDIA - A COMPARATIVE ANALYSIS

Anil Chandran, UV Somayajulu, Tilak Mukherji
TNS India, Delhi, India

Around 42 percent of India's population is aged below 18 years, as per the 2001 census. Child abuse, the state of emotional, physical, economic and sexual maltreatment towards children, is a global phenomenon and India is no exception. Child abuse can be of physical, mental or emotional abuse or neglect to the child. Sexual abuse of children and adolescents is a very serious issue, but not many studies have attempted to look into this. Sexual abuse, as defined by World Health Organization, is the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to or that violates the laws or social taboos of society. This may include but is not limited to - The inducement or coercion of a child to engage in any unlawful activity. The exploitative use of a child in prostitution or other unlawful sexual practices- The exploitative use of children in pornographic performances and materials. However, for the purpose of the study sexual abuse is defined as severe forms of sexual abuse, which include assault, touching or fondling, exhibitionism and photographing in nude and other forms of sexual abuse, which include forcible kissing, sexual advances, exhibitionism and exposing a child to pornographic materials.

The objective of this paper is to have a comparative analysis of the extent of the problem of sexual abuse of children in the Indian states. The data from the report of the 'Study on Child Abuse: India 2007' carried out by the Ministry of Women and Child Development is used for the analysis. The age-wise incidence of sexual abuse indicates that children of 12 to 15 years of age and children at work are most vulnerable to severe forms of sexual abuse. In India, about one fifth of the children are facing one or more forms of sexual abuse, and this figure is the highest for Assam (57%) followed by Delhi (41%) and Andhra Pradesh and Bihar (34%). The lowest figures of sexual abuse are reported from Goa (2%) and Uttar Pradesh (6%). Sexual assault was reported by about 6 percent of children in India. Sexual assault was prevalent more in Delhi (15%) followed by Andhra Pradesh (14%). Of those children reporting sexual assault, 38 percent were adolescents aged 15-18 and about 26 percent were children aged 13-14 years.

Sexual abuse among children especially among children aged 13-18 is a very serious problem in the modern societies. Awareness creation among parents, children and other members of the society is the need of the hour. Planners and policy makers on this subject may take note of the findings presented and adequate corrective measures is expected.

AB_194 ALARMING CAESARIAN RATES IN RURAL AREA: RESULTS OF A COMMUNITY BASED SURVEY IN KERALA, INDIA.

Biju Soman
Assistant professor, AMCHSS, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, India

Background: World Health Organization recommends optimal rate(5-15%) of caesarian sections beyond which it might increase maternal morbidity and mortality. This paper highlights the alarming rates of caesarian sections identified from a survey done by village women as part of the panchayat level planning.

Methods: Socio-demographic details of Venganur panchayat (population 33,372) was collected by local women volunteers using structured questionnaire. This census included births that occurred over a five year period between June 2000 and May 2005 and the details was reconciled with recorded documents for accuracy. Socio-economic status(SES) was ascertained by standard methodology as in National Family Health Survey-2. Details of 97.2% of births (1720 out of 1769) were available for analysis. All births were assisted by medically qualified persons and there were no case of maternal death.

Results: Half the babies(51.3%) were male, 20.3% belonged to low, 45.5% to middle, and 34.2% to high SES families. Mean birth weight was 2.8kg and low birth weight (LBW) babies (<2.5kg) was 14.1% (95% CI 13.3, 16.6). Mean birth weight was lower and LBW rates were higher among low SES families ($p<0.01$) and female babies. Of this caesarian sections were 29.3% (95% CI 27.1, 31.4). Caesarian rates were more for male births, Hindu community, mid-week days and heavier babies but these were not statistically significant. On logistic regression analysis higher SES was found to be the major determinant (Odds Ratio 1.8; 95% CI 1.4, 2.2).

Conclusions: This is one of the higher reported caesarian rates from rural India. The clustering of caesarian births around mid-week days and in high SES points to nonmedical indications. This needs to be discussed in public forums and academic circles.

AB_109 POLICY RESPONSE TO REPRODUCTIVE AND SEXUAL HEALTH ISSUES OF ADOLESCENTS IN INDIA

Shailaja Tetali[1], Ashok Kumar[2], J.P.Kapoor[3],
[1]Student, Karolinska Institute, Sweden [2]Public Health Expert, Trainer, Government of Delhi, India
[3]Pediatrician & Ex-P.D, Delhi SACS, India

Introduction: Adolescents are a neglected group in India, although they make up 21.8% of the population and account for 35% of new HIV and a sizeable percent of STIs. This paper describes the magnitude of adolescent sexual and reproductive health (SRH) concerns in India, and the policy response to it.

Methods: To find out adolescent SRH concerns, we conducted informal group discussions among 12,000 adolescents from 2002 to 2007 in New Delhi's public and private schools. For policy responses, we recently interviewed 50 people involved in policymaking, planning and implementation, and 100 doctors and trainers working with adolescents in Delhi.

Results: Discussions with Adolescents about their SRH concerns revealed their heterogeneous needs; their inability to understand the rapid physical and emotional changes, myths and misconceptions, physical safety and unwarranted sexual advances from males, early marriage and lack of say in decision making.

Adolescents depend on peers, pornography and experimentation for information on SRH issues. Policy response is in the form of authorization of: Adolescent Education Program by UNICEF, 'Youth United for Victory Against AIDS' and 'Adolescent Health Project' [Ministry of Youth Affairs, Sports with UNFPA], training in ARSH [MOHFW], starting adolescent friendly clinics at hospitals and slums of Delhi, National Institute of Open Schooling's distance education programs in ARSH and help lines for out-of-school adolescents.

Conclusions: Adolescents in India are at risk of abuse, STI and HIV. They lack information needed to protect themselves. Policy response to RSH issues has been positive but grossly inadequate. Responses need to recognize the heterogeneity of adolescents, and combine rights based, gender sensitive and service-based approaches. Active participation from civil society and communities in creating enabling environment and youth friendly services is urgently needed for future generations' empowerment and self-sufficiency.

AB_158 WOMEN'S AUTONOMY AND CONTRACEPTIVE USE IN RURAL DHARMAPURI, TAMIL NADU

P. Balasubramanian[1] TK Sundari Ravindran[2]
[1]Executive Director, Rural Women's Social Education Centre (RUWSEC), 191-A, Nehru Nagar, Vallam - Post, Chengalpattu. Tamil Nadu, India. [2]Honorary Professor, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. India.

Objective and Data: The main objective of this paper is to examine women's status and other socio-economic, demographic factors affecting contraceptive use in one district of Tamil Nadu. The data for the study is taken from a house hold health survey carried out in 2004. A total of 2450 households were covered in the survey. Households were selected through two-stage probability random sample with 50 primary sample units in three administrative blocks of Dharmapuri district. The district is one of the most backward districts of Tamil Nadu.

Findings: In the sample households, there were 2236 currently-married women in the reproductive age group of 15-49 years. Of them, about 63 percent currently used a method of contraception, which was 11 percent higher than that reported in NFHS-2 of Tamil Nadu (52%). Almost all the contraceptive users (99%) were permanent method users and only 15 couples practised temporary methods. Importantly, almost all the

contraceptive users were women and only 13 women's husband had undergone vasectomy operation. The mean age of the contraceptive users was 33.7 years.

Contraceptive prevalence varied much by background characteristics of women. Multivariate logistic regression analysis indicates that age, parity, family type and occupation of women are positively associated with contraceptive use. As compared to women below 30 years, women aged 30 and above years had 2.32 times higher contraceptive prevalence rate. Similarly women with 3 or above parity were 3.47 times more likely to use a contraceptive method than those with the parity of two or less than two. Women in nuclear family had 1.52 times greater chances of using a contraceptive method than those in joint or extended families. Desegregated analysis by family type indicated that the effect of education and occupation on the contraceptive use was nil among women in nuclear family but in joint families women's remunerated work out side home had significant impact on contraceptive use. However, education, caste and landowning status of women didn't show significant association with contraceptive use.

The findings clearly suggest that rather than any social economic factor, women's autonomy in the nuclear households and remunerated work out side home help them to make concrete decisions to use contraceptive methods.

AB_178 THE EPIDEMIOLOGY AND CORRELATES OF TRICHOMONAS VAGINALIS INFECTION AMONG MARRIED WOMEN IN INDIA: EVIDENCE AGAINST THE SYNDROMIC APPROACH TO DIAGNOSIS

Purnima Madhivanan[1], Karl Krupp[2], Chitra Karat[3], Varalakshmi Chandrasekaran[2], Jeffrey D Klausner[4], Arthur L Reingold[1]
[1]School of Public Health, University of California, Berkeley, USA [2]Public Health Research Institute, CSI Holdsworth Memorial Hospital, Mysore, India [3]Department of Obstetrics and Gynecology, CSI Holdsworth Memorial Hospital, Mysore, India [4]San Francisco Department of Public Health

Background: Trichomonas vaginalis infection (T. vaginalis) is the most common curable sexually transmitted infections (STI) worldwide. Data on prevalence and correlates of T. vaginalis infection in Indian women are lacking. We report the baseline cross-sectional results from a cohort of young women in Mysore, India.

Methods: Women aged 15-30 years, attending two reproductive health clinics in Mysore, India between October 2005 and December 2006 were recruited into the study. Eligible women were interviewed using a structured questionnaire, and tested for T. vaginalis, bacterial vaginosis, vaginal candidiasis, gonorrhea and herpes simplex virus type-2 antibodies.

Results: Of the 898 women enrolled, 53.9% of the women had laboratory-diagnosed RTI with 9% T. vaginalis infection (95% confidence interval [CI]: 8.6%-10.5%). Independent risk factors associated with T. vaginalis infection included age (Odds Ratio [OR] 1.17, CI 1.06, 1.29), woman's education level (OR 0.51, CI 0.30, 0.86), BV diagnosis (OR 10.99, CI 5.24, 23.05), and presence of abnormal vaginal flora (OR 7.43, CI 3.49, 15.81). Muslim religion was associated with reduced risk of T. vaginalis infection on univariate analyses (OR 0.42, CI 0.21, 0.84), but this association disappeared in multivariable analyses. Asymptomatic subjects accounted for 46% of culture-positive T. vaginalis cases. Reported symptoms were poor prognostic indicators, whereas the majority of clinical exam findings and laboratory tests tended to err on the side of good specificity.

Conclusion: The syndromic approach to T. vaginalis diagnosis is likely causing substantial over-treatment of uninfected women and under-diagnosis of asymptomatic infected women.

AB_184 SENSITIZATION WORKSHOP WITH MEDICAL FRATERNITY.

Aslam Nayyer,
India-NAZ Foundation International

Like in other parts of the world, in this region too, sexuality is situated in a diverse set of cultural and socio-political realities. In the field of sexuality itself, the language used is often negative, disease based and medicalised. We need to find, develop, use language to describe sexuality in ways that accurately reflect the complicated and multiple realities of people's lives, including their experiences of pleasure, pain and all the shades in between.

We need to understand how sexuality plays out in different local communities and contexts, how it is

regulated, about the mechanisms. The population of men who sex with men (MSM), is rarely discussed because of homosexual acts are in India. With the STI rates on the rise, men need to take more responsibility for their sexual health, according to leading sexual and reproductive healthcare.

Due to traditional male attitudes, men rarely even speak to their mates about sexual health issues. With STI rates on the rise, it is vital that men understand the importance of practising safe sex at all times, and having regular sexual health checks. Through workshops, we came to know about the medical students and doctor's view about homosexuality and its impact on treatment. Participants had long discussion on the topic of male to male sexual behaviour etc. They discussed about Kamasutra and the sculptures at Kajuraho that ancient Hindu India recognized and probably accepted homosexual practices.

Process: VENUE: KGMC Lecture Hall; No. of participants: 37 respondents including Faculties and Students of King George Medical College, Lucknow.

After the question/answer session, a set of questionnaire prepared by Bharosa Trust had been distributed. Every questionnaire had questions, which focused on Sexual Health of MSM. It was a tool through which we have calculated the success of workshops.

Issues: We have discussed many issues like; male to male sex in Indian framework, better acceptance of homosexual peoples who are living with HIV/AIDS, principles of basic courtesy and equity, personal, social equality and individual respect. Studies on sexualities and gender were also the part of the workshop. They were given data on prevalence of HIV & STIs among men who have sex with men.

During workshops we have also discussed the high level of HIV/STI vulnerability and risk taking amongst feminised males (kothis) who have sex with males, especially those who sold sex and about the low economic and social status, low self esteem, high frequency receptive and sex with very low levels of condom use, a large numbers of different partners and poor access to sexual health diagnosis and treatment services etc, High HIV/STI vulnerability of female partners of males who have sex with males and Inadequate access to appropriate condoms and lubricant.

Description: There was a lack of understanding on male to male sexual behaviour. There was an understanding that it was a small isolated group and only some of them had come across with patients who had reported male to male sex and that too the number was very limited. Knowledge on anal STI was very limited. The need for anal inspection had never been felt in the past by the doctors unless the same is specifically mentioned by the patient.

During the workshop we have suggested to use some tips in Ano-genital examination with MSM for making comfortable like; physical examination may be embarrassing for some patients and is often a factor in patients delaying presenting clinicians for diagnosis and treatment, Good preparation will enable the examination to proceed smoothly and efficiently, Explain the examination procedure to the patient and provide an opportunity for questions and many other tips were given by Mr. Arif Jafar in the workshop.

Studies on sexualities and gender were also the part of the presentation. They were given data on prevalence of HIV among men who have sex with men. It was explained to them that the sexualities is not fixed and the people should not be seen in compartments in reference to their sexual behaviour.

Lesson Learnt: Participants came to know about the frameworks of male to male sex then are substantially divergent and inclusive. It includes normative males who desire to penetrate as the only signifier, feminised males (kothis), along with hijras, who desire to be penetrated by other males, and adolescent and other males who do masti together for fun, to experiment, or just to enjoy. Males are often easier to access for sex than females, while male sex workers are usually cheaper than female sex workers are. Such same-sex behaviours occur in neighbourhoods, all male institutions such as prisons, between male friends who seek release from "body heat" and semen discharge. It also includes self-identified gay men, primarily among the urban, English speaking elite and middle classes.Some other related issues, which participants have learnt from workshops, include basic knowledge of gender equity, sexuality HIV & AIDS.

AB_191 SEXUAL AND REPRODUCTIVE HEALTH CONCERNS OF MALES AND AVAILABLE SERVICES IN CHAKARIA, BANGLADESH

Ilias Mahmud, Sabina Rashid, Mushtaque Chowdhury, Nabil Ahmed
James P Grant School of Public Health, BRAC University

Background: Poor sexual and reproductive health (SRH) is a cause of enormous suffering for millions of the world's poorest people. Despite two decades of sustained efforts, progress in improving SRH has remained slow and SRH rights poorly understood and articulated. This study seeks to understand rural men's sexual and reproductive health concerns and their access to health care providers.

Methods: We randomly selected one thousand households and interviewed seven hundred married men from these households. Data was collected using a questionnaire consists of both open ended and close ended questions. Out of these seven hundred respondents five percent were re-interviewed to ensure that interviews were authentic and the interviewer obtained verbal informed consent.

Results: The result showed that 60% respondents had SRH concerns and 63% of them received treatment (formal &/or informal) for their concerns. Leading SRH concerns include premature ejaculation, loss of semen through nocturnal emissions and masturbation, and difficulty in maintaining an erection. People preferred private medical doctor to seek treatment over other formal sectors such as hospital and clinics. A large number of people also sought care from informal providers. These informal providers are traditional herbalists (kabiraj); unregulated allopath (village doctor and drug seller); unregulated homeopath; and religious healers. Respondents suggested ways to improve the current SRH services, such as a specialized hospital with community outpost in every village; and affordable or free treatment for poor.

Conclusion: Since the SRH concerns/experiences are broader than the diseases the health service delivery system needs to address concerns beyond the 'disease' model of SRH.

AB_192 PREVALENCE OF ANAEMIA AMONG ADOLESCENT GIRLS IN RURAL KERALA

Arun Basil Mathew[1], Sajith J S[2], Ajayan K[3], Vijayakumar K[4], Soman C R[3]
[1]-IV Yr MBBS, [2]- Final MBBS Medical College, Trivandrum [3]Health Action by People, Kochulloor, Trivandrum [4]Dept. of Community Medicine, Medical College, Trivandrum

Background: In India, Anaemia is a major public health problem with far reaching consequences for the health of women and children. According to available evidence, no State in India is free of anaemia. Against this background, we decided to assess the prevalence of anaemia among adolescent girls of rural Kerala.

Methodology: Adolescent girls, aged 10-19 years (N=2370) attached to the Anganwadis in Varkala and Chirayankeezhu ICDS blocks, were studied. Haemoglobin was estimated using

cyanmethaemoglobin method, in a semi auto analyzer. The children were in the age group 10 - 19 yrs.

Results: The haemoglobin levels ranged from 7.6 - 14.8 gm/ dl. The two groups did not differ much in haemoglobin levels. Though children from Chirayinkeezhu had slightly lower levels of haemoglobin, (Mean 12.2 gm/dl Vs 11.6 gm/dl) but the difference was not significant. Only one girl had haemoglobin level below 8 gm, while 14 (0.6%) children had haemoglobin levels between 8 - 10 gm. 240 children (10%) had haemoglobin levels between 10 - 11 gms. 89 % children had haemoglobin levels between 11 and 14.8 gm/dl. The mean haemoglobin level observed was 11.92 gm/dl.

Conclusion: Severe or moderately severe anaemia does not exist among the adolescent girls of rural Kerala. However, there is a need for shifting the haemoglobin distribution further to the right to ensure optimal health for future mothers of Kerala.

AB_200 ROLE OF SOCIAL AND DEMOGRAPHIC FACTORS IN DECLINING CHILD SEX RATIO (CSR) IN AN URBAN LOCALITY OF EAST DELHI.

Sonali Meena , Sanjiv Bhasin, Narinder Saini
University College of Medical Sciences, Delhi

Background: Human reproduction, like all other activities, is always imbued with cultural meanings. Gender disparity manifests itself in various forms, the most obvious being the trend of continuously declining female sex ratio in the population in the last decade. Census 2001 reports a decline in child sex ratio (CSR) from 945(1991) to 927(2001) {18 points decline}. The present epidemiological study was conducted to examine the demographic and social factors affecting CSR.

Methods: The present cross sectional study was conducted (Jan - Oct'06) in a well-defined area Vivek Vihar, an urban community in East district of Delhi. Universal coverage of all 1121 households was done to identify families having children in the age group of 0-6 years. A pre designed and pre-tested Proforma was used to collect details of socio demographic profile of parents having children in the age group of 0-6 years. Perception of mothers regarding gender bias and their awareness about The PCPNDT Act, 1994 was also enquired.

Results: The CSR was 702 females per 1000 males. CSR for 1st, 2nd and 3rd birth order was 933, 547 and 333 respectively. CSR was 959 in case 1st child was male and 385 when previous child was a female. The CSR was much better when fathers were in professional services and when family income was more than Rs.30,000 per month ($p < 0.05$). It was better in parents with higher education and in nuclear families ($p > 0.05$). Awareness of PCPNDT Act was low (33.2%). Approx. 63 % thought abortion to be illegal and approx. 19.5 % did not know the status of legality of abortion in India.

Conclusion: The CSR was unacceptably low. The CSR worsened significantly ($p < 0.05$) with increasing birth order and was affected by sex of previous child/children. The findings point to significant role of social and demographic factors in declining CSR in the study area.

AB_203 LEVELS AND CORRELATES OF MATERNAL MORBIDITY IN WOMEN OF AGE GROUP 15-49 YEARS IN URBAN SLUM IN KOLKATA

Maitraye Basu
Achutha Menon Centre for Health Science Studies,
Sree Chitra Tirunal Institute for Medical Sciences

Background: The burden of maternal mortality is huge. Yet, the number of women who suffer from maternal morbidity are much higher than the number of maternal deaths. Few community based studies that exist on women's self-reported symptoms of maternal morbidity reveal an enormous, unaddressed public health problem.

Objectives: To estimate the levels and correlates of maternal morbidity and to describe women's health seeking behaviour with respect to these self-reported morbidity experiences.

Methodology: Cross sectional study on self-reported maternal morbidity without clinical examination.

Results: In the study, the prevalence of antenatal morbidity was 23.5 percent, morbidity during labour was 16.5 percent while postpartum morbidity was 25.5 percent. The overall maternal morbidity was 44.5 percent. Though past history of ailments, decision taking regarding obtaining healthcare, type of past delivery, type of last delivery, wantedness of the index pregnancy, perceived availability of medicines at the health facility and behaviour of the staff at the health facility came out as significant correlates of maternal morbidity in the bivariate analysis. Finally food intake (p-value 0.007) and physical activity during the antenatal period (p-value 0.001), awareness of danger signs of pregnancy (p-value 0.011) and type of last delivery (p-value 0.005) came out as significant correlates in the multivariate analysis. Though 97.5% women went for antenatal checkup and 93.4% had institutional deliveries (mostly in government tertiary hospital), women still resorted to the less than fully qualified medical practitioners as well for healthcare. Only 14.5% of the women were aware of the danger signs of pregnancy.

Conclusion: Women should be made aware about the danger signs of pregnancy, beneficial effects of increased food intake and reduced physical activity in the antenatal period. Staffs providing healthcare should be trained to communicate with the patients and drugs should be made freely available at the government hospitals.

AB_217 ALTERNATE CHOICES FOR PREDICTING LEVELS OF POST-NATAL CARE USE IN MATERNAL HEALTH PROGRAMMES

Meena Daivadanam
MPH2007, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum

Background: A new mother is at maximum risk of dying in the first 24 hours after delivery, hence the need for widespread and adequate post-natal care (PNC). WHO through its Millennium Development Goals (Goal 5, Target 6) has focused considerable attention on PNC as one of the maternal health components of Reproductive and Child Health Services provided at various levels. Since antenatal screening alone has proved ineffective as a tool in maternal mortality reduction, we need to take a serious look at postnatal care and its possible impacts. Paucity of data however makes this difficult. One alternative is to identify strong predictors, readily available through routine data collection that could serve as indicators of the adequacy of post-natal care.

Methods: Thirty-four possible predictors, identified from existing literature, were obtained through various data sources such as the NFHS -3 (2005-06), RCH - DLHS and Facility Survey State-wise indicators (2001-03) and the Special Survey of Deaths (2001-03) using RHIME from SRS. The extent of the variation in PNC explained by these predictors was assessed using linear regression.

Results: Three predictors were identified as possible proxies for PNC: % of women with more than 3 antenatal checkups (adjusted R2:0.873), % of women who delivered by any health professional (adjusted R2:0.933) and % of women who delivered in a health facility (adjusted R2:0.876).

Conclusion: In the absence of actual data, the identified predictors could be used to track PNC in both institutional and home delivery settings. However collection of reliable and quality data regarding various aspects of postnatal care is necessary to strengthen the postpartum component of maternal services.

AB_112 POVERTY AND DEPRIVATION: FORGOTTEN DETERMINANTS OF REPRODUCTIVE HEALTH?

Aarti Kelkar-Khambete
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences

Background: Fishing communities in Kerala form one of the most deprived sections of the population and lag behind significantly in terms of access to basic infrastructural needs such as water, housing and sanitation. Access to basic facilities is known to improve overall health, but its implications for reproductive health of women have not been specifically examined.

Methods: The following study aimed at exploring the impact of poverty and poor living conditions on the reproductive health of women from a fishing village in Trivandrum. In-depth informal interviews were conducted with 150 women using open-ended interview schedules. Bivariate analysis using Chi-square tests of significance and stratified analysis were used for analysis of quantitative data.

Results: Higher frequencies of symptoms were found to be associated with poor socioeconomic status (c2, p value 0.04), lack of resources such as water and toilets (c2, p value 0.1) and poor sanitation and hygiene practices (c2, p value 0.1). Urinary tract infections among women were found to be associated with lack of facilities such as toilets (c2, p value 0.1), clean water (c2, p value 0.1) and lesser frequency of bathing (c2, p value 0.1). Reproductive tract infections among women were associated with poor personal hygiene practices (c2, p value 0.1).

Conclusions: The study argues that access to basic needs such as water and sanitation is an important human right and urgent attention at the policy level to the provision of these basic needs will go a long way in improving the reproductive health situation of women.

AB_176 SEXUAL AND REPRODUCTIVE HEALTH SEEKING BEHAVIORS OF YOUNG WOMEN IN RURAL AND PERI-URBAN AREAS OF MYSORE, INDIA.

Varalakshmi Chandrasekaran[1], K Krupp[1], C Karat[2], A Arun[3], P Madhivanan[4]

[1]Public Health Research Institute, CSI Holdsworth Memorial Hospital, Mysore, India [2]Department of Ob/Gyn, CSI Holdsworth Memorial Hospital, Mysore, India [3]Department of Pathology, Vikram Hospital, Mysore, India [4]Public Health Research Institute / School of Public Health, University of California, Berkeley, USA

Background: Reproductive tract infections (RTI), including sexually transmitted infections (STI), represent a major public health problem in India. Poor health seeking behaviors among young reproductive age women are a major concern since this group experiences the maximum morbidities related to these infections.

Methods: Between October 2005 and December 2006, women aged 15-30 years were enrolled in a cohort study. Participants underwent an interviewer administered questionnaire and laboratory diagnosis for STI/RTI. Vaginal swabs were cultured for T vaginalis and candidiasis; Gram stains were used for diagnosis of bacterial vaginosis, an endocervical swab was cultured for N gonorrhea and a type-specific ELISA test was used to detect HSV-2 antibodies.

Results: Of the 898 participants, 445 (49.5%) reported having symptoms of RTI, out of which, 152 (16.9%) sought any treatment for reproductive health in the past year. Overall, 53.9% of the women had laboratory-diagnosed RTI including 9% trichomoniasis, 11% HSV-2 infection, 19% bacterial vaginosis and 30% vaginal candidiasis (95% CI: 27.9%-33.9%). A majority of participants (65%) had complaints of abnormal vaginal discharge and almost all of them reported continuing unprotected sex with their partners. Eighty-two (9%) had complaints of genital ulcers (65%) and also continued to have unprotected sex with their partners.

Conclusions: In India, young women experience a high burden of RTI. Because this population has poor health seeking behaviors, many of these infections lead to adverse sequelae including acquisition and transmission of HIV/STI and adverse birth outcomes. Aggressive screening with laboratory diagnoses should be a high public health priority in India.

NON COMMUNICABLE DISEASES

AB_31 ADDRESSING TOBACCO CONTROL IN DENTAL PRACTICE: SURVEY OF DENTISTS KNOWLEDGE, ATTITUDES, AND BEHAVIOR

Chandrashekar Janakiram, Madhu Unnikrishnan, Manjunath B C
Community Dentistry, Amrita School of Dentistry, Cochin, India

Dental professionals are strategically placed to be the leaders in tobacco prevention and cessation as they provide preventive and therapeutic services to a basically healthy population on a regular basis.

Objectives: To assess the knowledge, attitudes, and behaviours regarding tobacco cessation of dentists in there private dental practice.

Methods: A sampling frame of Indian Dental Association, Cochin (IDA) enrolled dentists, practicing in Ernakulam city, was obtained from the IDA and contacted by mail. The letter describing the rationale for the study contained a 35 item pre-tested questionnaire was personally delivered and with a stamped envelope. 114 dentists returned a usable questionnaire. Data were entered and analysed using SPSS. Frequencies were calculated for all variables and correlations were measured between key variables.

Results: Based on respondent-dentists' self reports, 54.6% were not confident in tobacco cessation counselling, 10.6% never asked, 60.9% asked in 50% of their patients- tobacco use and 17.6% of dentist surveyed were having a smoking habit. Participating-dentists perceived that they wanted to do Tobacco cessation but were not sure of quitting rate in patients, the average time spent counselling patients about tobacco cessation was less than 2 minutes.

Conclusions: Tobacco cessation is not a routine part of dental practice. The dentists perceive lack of formal training as the reason for less motivation about tobacco counselling and hence infrequently incorporated tobacco cessation into their dental practices. The tobacco habit among dentists is also detrimental to Tobacco cessation counselling.

AB_46 VALIDATION OF SELF-REPORTED SMOKING STATUS BY SERUM COTININE LEVEL MEASUREMENTS: AN INDIAN PERSPECTIVE

Panniyammakal Jeemon[1], Agarwal S[1], Lakshmy R[1], Ruby G[2], Vivek C[1], Reddy K S[1]
[1]All India Institute of Medical Sciences, New Delhi [2]Centre for Chronic Disease Control, New Delhi

Objectives: To assess validity of self-reported smoking in an Indian industrial population by comparing self reported status with serum cotinine levels.

Methods: We chose 426 individuals by stratified random sampling from a database of 3397 individuals surveyed at New Delhi for the Cardiovascular Disease (CVD) surveillance programme in a large industrial setting. Questionnaires assessing details of smoking practices and duration of environmental tobacco smoke exposure (if any) was administered. Cotinine level was measured in the blood samples of all these individuals.

Results: The study population comprised of 142 ETS unexposed non-smokers, 142 ETS exposed non-smokers, and 142 active smokers. Cotinine level among ETS unexposed non-smokers was non-detectable; and for ETS exposed non-smokers and active smokers, the median (interquartile range) were non-detectable (non-detectable - 46.1 ng / ml) and 336 ng / ml (204 ng / ml - 500 ng / ml) respectively. The best combined sensitivity (91%) and specificity (87.2%) yielded a cotinine cut off level of 40.35 ng / ml to differentiate active smokers from ETS unexposed and ETS exposed non-smokers (AUC = 0.902). The cotinine cut-off level was estimated at 10.95 ng / ml using a similar analysis (sensitivity= 43%, specificity=82%; AUC = 0.64) to distinguish ETS unexposed non-smokers from ETS exposed non-smokers. Misclassification rate was estimated at 19.0% and 57.1% among self-reported ETS unexposed non-smokers and ETS exposed non-smokers respectively.

Conclusions: Obtaining history of tobacco use is a fairly accurate method of detecting smokers in epidemiological studies and serum cotinine levels accurately differentiate smokers from non-smokers. However, a brief questionnaire assessing passive smoke exposure was modest in distinguishing ETS exposed from ETS unexposed non-smokers.

AB_47 SMOKING AMONG THE DIABETES PATIENTS AND THE NEED FOR INTERVENTION. OBSERVATIONS FROM A STUDY IN KERALA

Thresia C.U[1], Thankappan K.R[1], Pradeep Kumar A.S[1], Sailesh Mohan[1], Mark Nichter[2], Harry A Lando[3], [1]Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences [2]Department of Anthropology, University of Arizona, USA [3]Department of Epidemiology, University of Minnesota, USA

Backdrop: Diabetes (17% compared to 4.8% for India) and smoking (4 million smokers in 2005) pose major threats to Kerala's public health. Smoking is a modifiable risk factor for diabetes as well as its complications. Therefore, the major objectives of our study was to document the prevalence of tobacco use among male diabetes patients, to investigate whether patients had received cessation advice from their doctors, and to investigate patients' perceived risk of tobacco use as a factor associated with diabetes complications.

Methods:Using a pretested structured interview schedule we collected information on various aspects of diabetes and tobacco use among an opportunistic sample of 100 currently smoking male diabetes patients aged 18 years and above by screening 444 diabetes patients attended the OPD of various public sector clinics including medical college diabetic clinic in Thiruvananthapuram district.

Results: Among the 444 participants, the prevalence of tobacco use just prior to the diagnosis of diabetes was 60% (265). Of this, 84% were smokers. The current tobacco use was 32% and current smoking 22.5%. Following the diagnosis of diabetes, of the 265 users, 47 % quit smoking and 8% quit chewing completely. Although 75% of the current smokers were asked about tobacco use during the time of diagnosis by the doctors, 27% did not receive any advice. The perceived risk of tobacco use as a factor associated with diabetes complications was very low.

Conclusion: The high prevalence of tobacco use and low risk perception among the diabetes patients accentuates the need for integration of culturally appropriate cessation intervention in the diabetic care settings.

AB_61 LOW BIRTH WEIGHT AND MATERNAL SMOKELESS TOBACCO USE: A HOSPITAL BASED CASE CONTROL STUDY

Nunui Lalnuntlangi, K R Thankappan
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Science and Technology

Background: Tobacco use, particularly smokeless tobacco use among women in Mizoram state has been reported to be very high and no study has been reported from this state on the linkages between tobacco use and low birth weight.

Objective: To find out the association between low birth weight and tobacco use, specifically smokeless tobacco.

Methods: A hospital based case control study was conducted in three public and three private hospitals in Aizawl city. A total 115 cases (babies weighing =2500 grams) were recruited for the study. Information on sociodemographic variables, tobacco use and passive smoking were collected using a structured questionnaire. Anthropometric measurements such as birth weight of babies, weight, height and mid upper arm circumference of mothers were taken using standardized instruments. Bivariate and multivariate analysis was performed using SPSS.

Results: Mothers who reported current tobacco smoking were two times more likely to have low birth weight babies compared to those who did not smoke (OR 2.02, 95% CI 1.03, 3.94). Smokeless tobacco use was very high among cases (75%) and controls (79%), no association could be found between smokeless tobacco use and low birth weight probably due to the lack of variability.

Conclusion: Tobacco assessment should be made part of the antenatal examination in Mizoram and efforts should be made to provide tobacco cessation services to pregnant women.

AB_212 TOBACCO USE, QUIT BEHAVIOR AND REPORTED PHYSICIAN INTERVENTION AMONG PATIENTS IN PALAKKAD, KERALA

A. S. Pradeepkumar, K. R. Thankappan
Sree Chitra Tirunal Institute for Medical Sciences & Technology, Thiruvananthapuram

Background and objectives: Even though tobacco addiction prevents smokers from quitting smoking, health professionals can play a key role in promoting tobacco cessation. Objective of this study was to document tobacco use pattern among patients, their level of addiction, their quit behavior and reported physician behavior on tobacco cessation.

Methods: Questionnaire survey was conducted among 1137 patients returning after physician visit from 18 randomly selected primary health centers in Palakkad district, Kerala. Level of addiction was assessed by Heaviness of Smoking Index (HSI) score.

Results: Prevalence of any tobacco use was 54.4% (males, 75%; females, 32.9%) and smokeless tobacco use was 29.3% (males, 26.6%; females, 32.1%). Smoking was reported mainly by males (66.6%) and products used were cigarette (28.0%), bidi (43.8%) and both (28.2%). Mean HSI score of cigarette smokers, bidi smokers and combined users were 1.1, 1.6 and 2.4 respectively ($p<0.001$). Proportion with medium or high level addiction was highest among combined users (65%) followed by bidi (50%) and cigarette (40%) users. Among smokers, 45% were interested in quitting, 24% tried quitting. Nearly 90% were interested in getting help from physician for quitting and 80% of them were interested in getting medication. Those who were asked and advised by physicians about smoking (asked 24.5%, advised 34.5%) and smokeless tobacco use (asked 15.6%, advised 13.8%) were low. There was gender difference in favor of males ($p<0.001$) regarding smoking and less gender difference regarding smokeless tobacco use.

Conclusion: Physicians need to intensify clinic based tobacco cessation advice.

AB_58 NUTRITION AND HEALTH TRANSITION LESSONS FROM KERALA

Gangadharan Kadangot,
Department of Applied Economics, Kannur University

Equity in health is a major controversial area research. Even health economists are having differences of opinion in ensuring equity in health through State support. But even, as a society thriving for social democracy, this aspect cannot be neglected altogether. The recent NFHS data for 2005-06 reveals high levels of nutritional deprivations among the weaker sections of the society especially among the weaker and vulnerable sections. The state like Kerala which is considered at par with the advanced countries of the world has shown a deteriorating trend in major nutritional indexes. The NFHS data reveals that in Kerala, the proportion of underweight children was 27 in both NFHS 1 and NFHS II and in NFHS III it was 29 indicating a hike in this regard.

Whereas in the case of Tamilnadu they have bring down this from 37 in NFHS II to 33 in NFHS III indicating a better trend in improvement over Kerala. Similar is the case of anemia which actually increased from 22.7% in NFHS II to 32.3% in NFHS III in Kerala, at the same time it has declined from 56.5% to 53.3% in the case of Tamilnadu. The recent NSSO data on morbidity in Kerala also reveals a hike in both urban and rural morbidity .This nutritional inadequacy and malnutrition in childhood is leading to severe morbidity and health problems in their adolescent stage. This adversely affects their capacity to learn and work in their later period.

The present paper examines the extent of nutritional deprivation prevalent among the people of kerala by gender, sector and community dimension. The paper thus explores the health transition that occurred in Kerala recently as part of the nutritional deprivation on the one side and hike in the acute and chronic morbidity on the other.

AB_135 UNHEALTHY DIETARY BEHAVIOURS AMONG ADOLESCENT STUDENTS IN SOUTH DELHI

R Sharma[1], V L Grover[2], S Chaturvedi[3]
[1]- MD Community Medicine [2]- Professor (Retired), [3]- Professor Department of Community Medicine, University College of Medical Sciences, New Delhi, India

Background: Unhealthy diet among adolescents is of concern as the practices acquired at this stage of life are likely to persist later on too.

Objective: To study unhealthy dietary behaviours amongst adolescent students in South Delhi and the epidemiological correlates.

Study Design: Cross-sectional study. Setting: Three schools and two colleges in South Delhi. Participants: 550 adolescent students aged 14-19 year selected by cluster sampling. Statistical Analysis: Proportions, Chi square test, Multivariate logistic regression.

Results: Almost half of the respondents reported not having fruits, green vegetables or other vegetables daily. About 177 (32.2%) students were having 'junk food' and 28.2% were consuming carbonated soft drinks daily. More boys than girls reported unhealthy dietary practices. One in every two students (49.6%) had missed their breakfast once or more in the past 30 days. Using logistic regression analysis, father's education and type of residence were found to be the two chief correlates of unhealthy dietary behaviours. Adolescents' with father's education level lesser than graduation were more likely to be at risk for unhealthy dietary practices (Odds Ratio 5.496, 95% CI: 1.750-17.257). Those residing in private colonies or bungalows were more likely to be having unhealthy dietary practices, than those from government colonies (OR 2.644, 95% CI: 1.140-6.133).

Conclusion: The dietary behaviour of an overwhelming majority of the students was found to be unhealthy. The study points to an urgent need for measures amongst the adolescents to prevent a catastrophic burden of lifestyle diseases in the coming generations.

AB_74 REVERSING SOCIAL GRADIENTS IN THE PREVALENCE OF DIABETES MELLITUS IN URBAN INDIA

Vamadevan S Ajay[1], Anuradha Tripathi[1], Lekshmi Ramakrishnan[2], K R Thankappan[3], Dorairaj Prabhakaran[1], Kolli Srinath Reddy[4]
[1]Centre for Chronic Disease Control, New Delhi, India [2]All India Institute of Medical Sciences, New Delhi, India [3]AMCHSS/ SCTIMST/ Trivandrum, India [4]Public Health Foundation of India, New Delhi, India

Background: India is undergoing rapid urbanization and the prevalence of diabetes mellitus (DM) is on the rise. This study attempts to highlight the differentials in the prevalence of DM in the Indian industrial population in relation to urbanization.

Methods: A cross sectional survey was carried out among the employees and their family members (10930 individuals, mean age 39.6 years, men: 6764) in eleven medium-to-large industries, located in diverse sites, using a stratified random sampling technique. Information on behavioural, clinical and biochemical risk factors of DM was obtained, through standardized instruments. DM was diagnosed when fasting blood glucose was >7.0mmol/dl and/or on drug treatment for DM. Multiple logistic regression (MLR) analysis was carried out to identify the predictors of DM.

Result: High DM prevalence sites were located in highly urbanized cities (Delhi-10.9%; Hyderabad-14.1%; Chennai-10.4%; Bangalore-10.7%; and Trivandrum-16.6%) while low prevalence sites were located in urban cities (Lucknow-10.8%; Pune-8.4%; and Coimbatore-7.7%) and in predominantly rural locations (Ludhiana-6.6%; Nagpur-4.2%; and Dibrugarh-2.3%). MLR analysis reveals that educational status had little bearing on DM in the low prevalence sites, unlike highly urban sites where low education group had a significant higher risk (odds ratio: 2.08; CI: 1.51-2.87) for DM as compared to high education group.

Conclusion: The reversal of social gradient (higher occurrence of risk factors in the low socio-economic group) for diabetes in the highly urbanized areas forecasts the threat of very high diabetes burden among uneducated or those with low level of education, highlighting the need for innovative prevention and control strategies.

AB_79 A STUDY ON THE RISK FACTORS OF DIABETIC RETINOPATHY AND POSSIBLE RELATIONSHIP WITH VIRAL FEVER

Sriram Venkitaraman, Nijas Ahammed, Neethu Sukumar
SPM, Govt Medical College, TVM

Background : The state of Kerala this year has had an unusual occurrence of bouts of epidemic fever. A preliminary study indicates a relationship between diabetic retinopathy and viral fever. Early detection of visual disturbances in DM patients can help in arresting the progress of disease and serve as good indicator for control of blood sugar levels. A Detailed study will thus help in bringing in the right intervention for prevention and arresting the progress of retinopathy and indicate the possible relationship between diabetic retinopathy and viral fever.

Methods: A hospital-based case control study is being conducted in the Regional Institute of Ophthalmology, Trivandrum, from September to December 2007. This is designed to cover 100 Diabetic retinopathy patients and 300 diabetes patients without retinopathy as controls. The subjects will be interviewed using a semi structured questionnaire. Study variables include diabetic age, control of blood glucose level, insulin use, hypertension, hyperlipidaemia, history of exacerbation of symptoms after an attack of viral fever, co-existing renal disease and smoking.

Results: Initial data has been obtained and analysis of the same indicates possible relationship between occurrence of viral fever and diabetic retinopathy. Additional data collection and analysis is in progress.

Conclusion: A pilot study has revealed that an attack of viral fever in retinopathy patients has led to worsening of the disease and sudden decrease in vision. Most of the subjects with retinopathy are also found to have hypertension, raised serum lipids, renal disease or smoking habits, indicating a strong correlation between these risk factors and development of retinopathy. Final conclusion will be published after the study is completed.

AB_114 PREVALENCE OF TYPE 2 DIABETES MELLITUS AND PREDICTORS OF HYPERGLYCAEMIA IN CENTRAL RURAL KERALA, INDIA

Vijayakumar G[1], Kutty V R[2], Arun R[3]
[1]Medical Trust Hospital and Diabetes Care Centre, Kulanada, Pathanamthitta, India [2]Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Science [3]Insurance Medical Services, ESI Hospital, Ezhukone, Kollam, India

Background: India shelters the maximum number of people with type 2 diabetes mellitus (DM). Within India, interregional disparities in burden of DM are expected because of varying lifestyles and demographic patterns. Hence, to estimate prevalence of DM and impaired fasting glycaemia (IFG), and to explore predictors of hyperglycaemia (DM and/or IFG), a study was conducted in rural Kerala.

Methods: In 2007, a cross-sectional survey was conducted among 1990 adults (women/men: 1149/841; response rate: 82.7 percent) of two Panchayat Wards in Venmony Panchayat, Chengannur Taluk, Kerala, India. Pre-tested questionnaire, anthropometric and blood pressure measurements, and blood samples were used for data collection. Those with fasting plasma glucose (FBS) >= 126 mg/dL and/or current treatment for DM were considered as DMs; those with FBS 100 - 125 mg/dL were considered as IFGs.

Results: The age-adjusted prevalence of DM was 12.5 percent and that of IFG was 4.6 percent. Hyperglycaemia significantly correlated with increasing age but no statistically significant relation was observed between hyperglycaemia and sex. Adjusted for age, sex and family history of DM, hyperglycaemia was significantly associated with high socioeconomic status [Odds ratio: 1.36 (1.01 - 1.86)], central obesity (waist-to-hip ratio >= 0.80 for women and >= 0.90 for men) [3.17 (1.73 - 5.79)], high cholesterol (fasting serum cholesterol >= 200 mg/dL) [1.88 (1.43 - 2.46)], and hypertension (blood pressure >= 140/90) [1.52 (1.14 - 2.03)].

Conclusion: High prevalence of DM even in rural community and the co-existence of other non-communicable diseases (NCDs) validate the pandemic trend of NCDs.

AB_33 PAP SMEAR FINDINGS AMONG PRE AND POST MENOPAUSAL WOMEN ATTENDING A MATERNITY HOSPITAL- A COMPARITIVE

Kalavathy Mathurchennath[1], Deepa Sankar[1], Aysha Beegum[2]
[1]Regional Cancer Centre, Thiruvananthapuram, India [2]Govt Women & Children Hospital, Thycaud, Thiruvananthapuram

Background: Cancer is a disease of the aged and naturally we expect more number of uterine cervical cancer cases among post menopausal women. An analysis looking into the distribution of cervical precancerous lesions among these two groups of women will be of great interest. Such knowledge will help us in identifying the age group to be the focus for screening.

Methodology: Women attending the Out Patient Department of a Government maternity hospital in the city of Thiruvananthapuram are subjected for routine pap smear screening. All these women are interviewed for the basic sociodemographic and reproductive details. The collected pap smears are transported to Regional Cancer Centre and are processed here. The reports are distributed to the subjects next week.

Results: A total of 998 women were included in the study. 797 (80%) of the women were in the premenopausal group. 71% of women with normal cytology fell in the premenopausal group where as 43% of the women with Low Grade squamous Intraepithelial neoplasia and 20% of the women with invasive carcinoma were in the same group. The distribution of inflammatory smears (71% in the premenopausal group) (p value .001), and distribution of invasive cancers (80% in the postmenopausal group) (p value .028) were statistically significant. Even though 57% of the women with Low Grade Squamous intraepithelial lesion were in the postmenopausal group, the distribution was not statistically significant.

Conclusion: The results points to the importance of extending the screening programmes to all age groups. But since the invasive cancers are more in the postmenopausal age group, screening has to focus positively on premenopausal age group to tackle the precancers before they develop into invasive cancers.

AB_35 ORAL CANCER AWARENESS IN HIGH RISK POPULATION IN INDIA

Kalavathy Elango[1], K.R.Sundaram[2], P.Gangadharan[3], Sherry Peter[1], Civy Pulayath[4], Moni A. Kuriakose[1]
[1]Head and Neck Institute, AIMS, Kochi, India [2]Dept. of Biostatistics, AIMS, Kochi, India [3]Cancer Registry, AIMS, Kochi, India [4]Indian Dental Association, Kochi, India

Objectives: To evaluate the awareness of oral cancer, its risk factors and to estimate the prevalence of risk habits in a high-risk semi-urban population in India.

Methods: Health volunteers carried out a questionnaire based house-to-house assessment in a single day. The data was analyzed using SPSS 11.0 software.

Results: A total of 1885 persons participated in the survey of which 55% were males and 45% females. Of the surveyed group 86% had heard about oral cancer and 32% knew someone with oral cancer. Sixty one percent of the subjects correctly identified the causes; this included 77% of the subjects identifying smoking, 64% alcohol and 79% considering pan chewing as cause of oral cancer. However 24% believed that oral cancer is a contagious disease. More than 52% believed that poor oral health could lead to oral cancer and nearly 42% thought that oral cancer is an incurable disease.

About 40% males and 14%females had one or multiple high-risk habits. Higher the education, lesser the prevalence of habits ($p<0.001$) and more the awareness ($p<0.001$). Though 88% were literates, only 82% of the smokers and 75% of the tobacco chewers and 57% of those who consume alcohol were aware that their habits could lead to oral cancer.

Conclusions: Overall, the awareness of oral cancer in this high-risk population was satisfactory, though certain gaps exist stressing the need for health education, risk factors cessation counseling, motivating the public to perform oral self-examination and to attend oral cancer detection camps for early detection and prevention.

AB_105 CANCER CONTROL-LEADS FROM CANCER REGISTRY DATA

Gangadharan P[1], A. Nandakumar[2]
[1]Oncology - Cancer Registry, Amrita Institute of Medical Sciences, Kochi India [2]National Cancer Registry Programme, Bangalore, India

Background: Cancer control is a health priority in India. Information about incidence and distribution of cancer are essential for control planning.

Methods: The reports of the National Cancer Registry Programme of ICMR are analysed.

Results: Among the 19 registries the incidence rate was highest in Mizoram males (AAR-277.2) and lowest in Barshi, Rural Maharashtra(AAR-43.8). In men, lung and in women breast & cervix were among the leading 5 cancers in all places. Stomach was the leading cancer site in men in Bangalore, Chennai, and Mizoram. High rate of Gall bladder cancer in North and Thyroid cancers in south west coast are observed. In Aizawl & Sikkim female lung cancer rate was more than male rate. In Karunagappally, male lung cancer rate was 21.3 but the female rate was only 2.7. Tongue and Oral cancers had high rate in Kamrup, Bhopal, Bangalore, Trivandrum and Chennai. 70-80% of cancers present for treatment with more than localized stage of disease. 45-55% of all cancer in men and around 15-20% in women are tobacco related. These show the possible pathways to implement control.

Conclusions: Large proportion of cancers seen are either preventable or early detectable. Health care outlets in the rural areas should be used for implementing control programmes. Community empowerment programmes need great emphasis. District and taluk hospitals should have tissue diagnosis and cytology screening capabilities. Making cancer a notifiable disease should receive attention while planning control measures.

AB_113 CASE-CONTROL STUDY OF PHYSICAL ACTIVITY AND ANTHROPOMETRIC FACTORS AND BREAST CANCER IN SOUTH INDIA

Aleyamma Mathew[1], B Rajan[1], V Gajalakshmi[2], Beela Sarah Mathew[1], Paul Brennan[3], Paolo Boffetta[3]
[1]Regional Cancer Centre, Trivandrum, India [2]Epidemiological Research Center, Chennai [3]International Agency for Research on Cancer, Lyon, France

Background: We investigated the role of anthropometric factors and the time spent on household activities in the development of breast cancer (BC).

Methods: The study conducted at Regional Cancer Centre, Trivandrum and three cancer hospitals in Chennai during 2002-2005. Cases (n=1866) were women with histologically confirmed incident BC. Controls (n=1873) were age-matched women, who accompanied patients to the hospital. Using in-person interview information on household activities and other variables was collected. Anthropometric factors were measured using standard equipments. Odds ratios (OR) of BC were estimated by menopausal through logistic regression modeling.

Results: Risk of BC was increased for waist size > 85 cm (pre-menopause: OR: 1.38, 95% confidence interval [CI] 1.10-1.74; post-menopause: OR: 1.52, CI: 1.20-1.93) & hip size > 100 cm (pre-menopause: OR: 1.61, CI: 1.21-2.13; post-menopause: OR: 1.98, CI: 1.48-2.64). Increased body mass index (OR: 1.31, CI: 1.04-1.65 for 25.0-29.9 kg/m2 and OR: 1.53, CI: 1.02-2.31 for 30+ kg/m2) were associated with the risk of pre-menopausal BC, while height 160+ cm (OR: 1.63, CI: 1.09-2.44) was associated with risk of post-menopausal BC. Risk of BC declined with increasing time spent on household activities. Compared to <3 hours/day, the OR for 5-6 hours/day was 0.48 (CI: 0.32-0.72) in pre and 0.49 (CI: 0.34-0.72) in post-menopausal women.

Conclusion: The study provides support to the hypotheses that increased anthropometric measures and decreased level of physical activity are important determinants of BC in India.

AB_130 QUALITY OF LIFE ASSESSMENT IN BREAST CANCER PATIENTS UNDERGOING MASTECTOMY COMPARED TO BREAST CONSERVATION TREATMENT

Antony Lawrence K A, Manju A.S, Radha M S, Anoop A, Dr.Dinesh M, Dr.Padmanabhan T.K
Oncology department, AIMS, Kochi, India

Background- Evaluation of quality of life(QOL) is of paramount importance in the management of Breast cancer. Reports on QOL measurements are a rarity in the Indian subcontinent. The diagnosis of breast cancer affects the women both physically and psychologically and the subsequent treatment with surgery followed by chemotherapy or radiation can significantly affect the body and mind. A comparative study of conservative versus non-conservative options of treatment would help to evaluate the quality of life in these patients.

Methodology- The survey was conducted using the EORTC BR-23 questionnaire approved for the pilot study. 44 patients participated in the survey. The QOL questionnaire was analysed to identify any variations among the mastectomy patients compared to those receiving breast conservation treatment.

Results:- Loss of femininity was stated by 72 % taking non conservative therapy compared to 52.5% taking conservative therapy . No major difference was observed in the degree of sexual activity .In the mastectomy group 56 % were sexually active compared to 47.1 % in the conservative group.

Conclusion-.The study probes into the intimate link between treatment and its sequelae in breast cancer patients using a standardized questionnaire.

AB_157 PROJECT SPICE SCREENING PROGRAMME IN IDUKKI DISTRICT FOR ORAL CANCER ERADICATION - RESULTS OF PILOT SURVEY

Jacob Kuruvilla, Varghese Mani, Jayan Jacob Mathew
Mar Baselios Dental College, Kothamangalam, Ernakulam

Introduction: Oral cancer accounts for about 30% of all cancers in India. Oral Cancer is preventable, if diagnosed and treated during the pre malignant stage itself.

The Academic Forum of Mar Baselios Dental College, Kothamangalam, Kerala, India, has proposed to address this problem by taking up a community health project covering the entire Idukki district in collaboration with the Indian Dental Association (IDA) Malanadu and Green Valley branches and Association of Oral and Maxillofacial Surgeons of India (AOMSI) along with the support of other service organizations as well.

Methodology: This project envisages to screen the entire population above 18 years of age for premalignant and malignant lesions and to provide basic modalities of preventive, therapeutical, surgical, and rehabilitative facilities. The major highlight of the project is focus on capacity building for the entire population by training them to perform a systematic oral self examination which enable them to recognize and expected to report oral lesions at an early stage, especially premalignacies, as this will greatly affect the prognosis of the treatment. As a first step, a pilot survey was conducted among a remote tribal community in Idukki district.

Results: 90% of the adult population in the area is habituated to pan chewing in the form of betel quid. Based on the findings of the oral examination, a 10% prevalence of oral white lesions and conditions was found in this population.

Conclusion: This population can be considered as a high risk group as far as oral malignancies are concerned.

AB_183 RISK FACTORS OF OVARIAN CANCER

Muhammed Jasim, Mohammed Shafi, Megha Bharath, Muhammed.J.Nishad
Government Medical College , Trivandrum

Background: Ovarian cancer is a silent killer. Internationally, the incidence is 3.1 cases per 100,000 women in Japan and 21 cases per 100,000 women in Sweden. Of all gynecological malignancies, ovarian cancer continues to cause the highest mortality with a least possibility of diagnosing it at an early stage. In India, approximately, 4 to 24% of ovarian masses discovered before menopause and between 39% and 63% of those found after menopause are malignant. Only an estimated 10% of affected patients have a genetic predisposition. A study to find out the risk factors of ovarian cancer is relevant to establish the role of these factors in the incidence of ovarian cancer.

Objectives: To identify the risk factors of ovarian cancer among patients reporting to the Department of Radiotherapy, Medical College Hospital, Trivandrum during October to December, 2007.

Methodology: A case control study is being conducted with 50 women of age more than 30 years with ovarian cancer as cases and the control being 150 women without ovarian cancer matched for age from the Radiotherapy and Surgery wards of Medical College Hospital, Trivandrum respectively within a time period of 2 months from October to December, 2007.The data is collected by interviewing the subjects based on a questionnaire, which contains the study variables: a)General information b)Personal history c)Past history d)Family history e)Menstrual history f)Obstetric history g)Diet.

Analysis: By odds' ratio, univariate analysis and adjusted.

Results and conclusion: The study is under progress

AB_189 ROLE OF SCREENING IN ORAL CANCER MORTALITY: EVIDENCE FROM A CLUSTER RANDOMIZED CONTROLLED TRIAL

Gigi Thomas[1], Ramadas Kunnumbath[2], Thara Somanathan[3], Sankaranarayanan Rengaswamy[4], Babu Mathew[5]
[1]Community Oncology Division, Regional Cancer Centre [2]Radiotherapy Division, Regional Cancer Centre [3]Cytopathology Division, Regional Cancer Centre [4]Screening Group, International Association for Research on Cancer [5]Department of Oral Medicine & Radiology, Azeezia Dental College, Quilon

Background: Oral Cancer is a major health problem in developing countries. No randomized study was carried out to test the efficacy of screening in oral cancer.

Objective: We aimed to assess the effect of visual screening on oral cancer mortality in a cluster randomized controlled trial in India.

Methods: Thirteen clusters were randomized to intervention (seven) and control (six) groups. Healthy subjects aged 35 years and above were eligible for the study. In the intervention group 3 rounds of visual inspection at three-year intervals were carried out by trained health workers. In the control group no visual examination was done but standard care was given. Screen positive subjects were referred for clinical evaluation by doctors, biopsy and treatment. Outcome measures were stage distribution, survival and oral cancer mortality. Mortality in both groups were analysed and compared based on intention to treat by use of cluster analysis.

Results: A total of 191, 873 subjects participated in the programme. The participation rate was 91% and compliance to referral was (63%). 205 cases and 77 deaths from oral cancer were identified in the intervention group compared to 158 cases and 87 deaths in the control group. 41% of cases in the intervention area were in early stages compared to 23% in the control group. Overall reduction in mortality was 21%, which was not significant. However a significant 34% reduction in mortality was observed among tobacco and alcohol users in the intervention arm.

AB_196 HIGH NATURAL RADIATION AND CANCER IN KARUNAGAPPALLY

Jayalekshmi P[1], Reghu Ram Nair[2], B. Rajan[2]
[1]Natural background radiation cancer registry, [2]Regional Cancer Centre, Trivandrum

Background: Karunagappally is a coastal taluk in Kollam district 100 kms north of Trivandrum. In 1991 it had a population of 383514 persons. High levels of natural radiation present in Karunagappally, caused concern regarding health effects. Karunagappally study was initiated in 1990 by RCC to investigate whether chronic exposure to natural radiation increased cancer risk.

Methods: By personal interview information on socio-demographic life style factors was obtained from 359,619 persons residing in Karunagappally during 1990 to 1998. An internationally recognised cancer registry operation recorded cancer cases from 1/1/1990 from more than 60 centres where diagnosis or treatment of cancer was undertaken. Population based cancer incidence and distribution were compared with data published by WHO. During 1998 to 2002 cancer incidence rates among males and females were 115.9 and 80.0. Comparable Trivandrum Urban rates were: males 92.2, females 89.9 and Trivandrum Rural rates were males 94.1 and females 76.9. Compared to Trivandrum, higher rates were seen in males but not in females. The comparison showed that lung cancer incidence in Karunagappally males was more than in Trivandrum. There were only marginal differences in other cancers. The leading cancers in both Trivandrum and Karunagappally were the same. Chavara, Neendakara, Alappad and Panmana showed highest (median) annual dose 3.2 to 4.8 mGy / year. No cancer site was significantly related to lifetime dose.

Conclusion: There is no evidence yet to indicate any alarming increase of cancer in Karunagappally due to radiation. Study is being continued to yield larger numbers to critically examine the risk.

AB_163 TOBACCO DEPENDANCE AMONG THE DISTINCT TRIBAL POPULATION IN KERALA, INDIA

Jayakrishnan Radhakrishnan[1], Sreekumar.C[1], Sankara Sarma.P[2],
[1] Community Oncology Division, Regional Cancer Centre [2] Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Science

Introduction: Tribes are a group of marginalized section of the population. Consumption of tobacco is believed to be very high among them. There is inadequate information on their use pattern especially tobacco dependency.

Objectives: The study was to assess the tobacco use and smoking dependency among the tribal population in Kerala state.

Materials and Methods: In a rural district of Kerala, using a structured pre-tested interview schedule, data on socioeconomic status and tobacco habits were collected from 4936 (2572 males) tribes in the age group 13-90 (mean age 37). Among smokers, nicotine dependency was assessed using Fager-strom scale.

Results: While 65.0% of females (95%) CI 62.8 - 67.1) were currently using smokeless tobacco the prevalence was 24.7% (22.9-26.5) among males. Among males 63.0% (60.9-64.9) were current smokers and among females it was 1.4% (1.0-1.9) The reasons reported for smoking were custom (28%), peer pressure (44%), work relief (19%) and pleasure (7%). In addition to the above reasons, 20% reported that tobacco chewing relieve them from toothache. High nicotine dependency score (>5) was found among smokers (42%). Age was positively correlated with dependency and education was inversely related to dependency ($P<0.05$).

Conclusions: There is a high level of nicotine dependency among smokers. Tobacco use is an accepted traditional norm in these communities that can lead to serious health consequences if left unchecked. Cohesive efforts are needed from policy makers, health providers and voluntary organizations to curb this high-risk practice.

AB_21 STUDY OF PREVALENCE, AWARENESS, TREATMENT AND CONTROL OF HYPERTENSION IN AN URBAN COMMUNITY OF MANGALORE

Jagdish Chataut, Bheemeshappa Somappa Sajjan, Mangalore Shashidhar Kotian
Community Medicine, Kasturba Medical College, Mangalore, India

Background: Hypertension is the commonest cardiovascular disorder and now regarded as major public health problem. It is a precursor to major diseases like myocardial infarction, stroke, renal failure etc. The aim of present study is to determine the prevalence, awareness and control of hypertension among urban population of Mangalore.

Methods: A cross-sectional study was conducted among the population living in Bollur- an urban community in Mangalore. A total of 820 subjects (males n=232 and females n=588) participated in our study (age =30 years). The participants underwent anthropometric measurement and blood pressure and answered a pretested questionnaire. Hypertension was defined as per JNC VII criteria.

Results: Overall prevalence of hypertension was 34% (95% CI: 32.35 -35.65, males: 40.5% and female: 31.5%, p=0.014). Age specific prevalence of hypertension showed significant progressive increase in blood pressure ranging from 9.1% to 60.6%. Awareness rate, treatment rate and control rate were 55.9%, 33.3%, 14.3% respectively.

Conclusion: Prevalence of hypertension is significant in this South Indian urban population. Awareness rates are suboptimal, adequate treatment and control is at a low level.

AB_193 DISTRIBUTION OF BLOOD PRESSURE IN GIRLS AGED 10-19 YEARS IN RURAL KERALA

Sajith J S [1], Arun Basil Mathew[2], , Ajayan K[3], Vijayakumar K[4], Soman CR[3]
[1]- Final MBBS, [2] - IVth Yr MBBS, Medical College, Trivandrum [3]Health Action by People, Kochulloor, Trivandrum [4]Department of Community Medicine, Medical College, Trivandrum

Background: Life style diseases like type 2 diabetes, hypertension, ischemic heart diseases and obesity have emerged as major threats to the people of Kerala. Recent surveys indicate that one out of three adults in Kerala is hypertensive. It is well known that the seeds of hypertension are sown in childhood. Since there is no information on the distribution of blood pressure among children of Kerala, we measured the blood pressure of 2327 girls of rural Kerala.

Methodology: 2327 girls, aged 10-19, representing the anganwadis in Varkala & Chirayinkezhu ICDS blocks, were the subjects of the investigation. Resting blood pressure was recorded in the sitting posture. Omron-digital automated BP apparatus was used for the measurement. Only a single recording was made.

Results: The distribution of blood pressure showed a pattern similar to that of girls from USA. Upto the age of 13, the 50th percentile (systolic & diastolic) blood pressure among girls in rural Kerala is less than that of US girls by an average 1mm of Hg. However, from age 14, the 50th percentile values of Kerala girls exceeded that of US girls by 1-2 mm of Hg. We also find that 10-15% of Keralan children have values at or above the 95th percentile of USA, suggesting the need for intervention.

Conclusion: There is evidence suggesting that hypertension is an emerging health problem in the adolescent girls of Kerala.

AB_19 STUDY OF CVD RISK FACTORS AMONG YOUNG ADULTS AND IT'S RELATION WITH BIRTH WEIGHT

Jayakrishnan.T.[1] Jeeja M C[2]
[1]Community medicine. Medical College, Kozhikode, India. [2]Medical College, Kozhikode, India.

Back ground: The Global Burden of Disease study reported that the Cardiovascular disease rank as the first cause of death in both developed and developing countries. The majority are caused by one or more of the cardio vascular risk factors - hypertension, diabetes, smoking, high levels of blood lipids, and decreased physical activity. Barker's hypothesis states that the infants with LBW are having high risk of developing CVD in adulthood . With this background, the study of CVD risk factors among young population and it's relation to the birth factors are being very important .

Methods: The study was conducted at Calicut Medical College, Kerala. From the 175 young adult subjects for whom the birth weight data was available anthropometrical measurements were done, blood samples were collected and lipid profile and Fasting plasma glucose was estimated. The relation of different CVD risk factors with birth weight was studied.

Results: 12.6% of the subjects were having over weight or obese.8.65% of the subjects were found to be hypertensive 9.4% of the subjects were having high cholesterol value and 39.8% of them have low HDL value. 7.7% of them have impaired plasma glucose. The birth weight was found to be negatively correlated with SBP, DBP,TC, and FBS values (N S).

Conclusion: The prevalence of CVD risk factors was high in young adult population of Kerala:. So a population based preventive strategy must be formulated and implemented including life style modifications in order to prevent the CVD risk curve from further shifting to right.

AB_41 DEMOGRAPHIC RISK FACTORS OF SOME NON-COMMUNICABLE DISEASES AMONG ELDERLY IN INDIA

G K Mini
Achutha Menon Centre for Health Science, Sree Chitra Tirunal Institute for Medical Science, Trivandrum

Background: The early demographic transition along with the rapid process of ageing observed in India is a major driving force behind the current epidemiological transition. National information on the distribution of risk factor burden of non-communicable diseases (NCDs) in different demographic groups is limited in India, especially among the elderly. The present study examines the inter-state variations in the prevalence of some NCDs like heart disease, hypertension and diabetes mellitus and identified the demographic risk factors among the elderly in India.

Methods: This study used data collected by the NSSO (2004) on Morbidity, Health Care and Conditions of the Aged. The national representative sample consisted of 34,831 elderly persons aged 60 years and above (males; 51%). Logistic regression analysis was done to find out the demographic risk factors of each disease separately.

Results: Self reported prevalence of diabetes mellitus was 3.2%, heart disease 2.2% and hypertension 4.9%. Among the major states in India, Kerala showed the highest prevalence of all the three diseases. Urban elderly were four times more likely to be diabetic, three times more likely to be hypertensive and more than three times more likely having heart disease compared to their counterparts. Males were more likely to be diabetic (OR:1.15;CI:1.15-1.16) and having heart disease (OR:1.72;CI:1.72-1.73) compared to females. Higher age is significantly associated with higher prevalence of all the three diseases.

Conclusion: There is need to modify the health system in the country by considering the demographic differentials in the preventable disease burden among elderly people in India.

AB_54 PREVALENCE OF ROSE QUESTIONNAIRE ANGINA, RISK FACTORS OF CAD AND RESOURCES AVAILABLE FOR MANAGEMENT

Shiney C Alex[1], Saxena P C[2], Singh Nahar[3]
[1]Faculty of Health & Medical Sciences, Allahabad Agricultural Institute-Deemed University, Allahabad, [2]Medical College, Allahabad, UP, India [3]Extension Department, AAI-DU, Allahabad, UP, India

Coronary Artery Diseases (CAD) ranks first in mortality and morbidity in developed countries and same is increasing in developing countries too. Financial drain to individuals and the country is startling in light of this.

To estimate prevalence of CAD, the Rose Angina questionnaire was used to identify major risk factors of CAD and availabile health facilities for CAD management in UP. Three hundred people >30years were selected randomly from Allahabad. Rose Angina Questionnaire survey and ECG, BP, RBS, height, weight, waist and hip circumference were taken. Data were analyzed by SPSS 14.0 and statistical significance was tested using relevant tests.

The estimated prevalence of Rose angina was 26%, (men 25.8% & women 26.4% {NS}). ECG showed CAD suggestive changes in 6.4% (men 5.6% & women 7.1%) of respondents. Around 6% of respondents reported that they have CAD diagnosed by doctor. Reported prevalence of CAD was 9%(men) and 3%(women). Reported prevalence of diabetes mellitus was 13.7% while prevalence based on RBS was 16.5%; reported prevalence of hypertension was 25% and hypertension measured was 48%. Among men 27% were current smokers. Family h/o heart disease reported 10%. Nearly half had BMI >25kg/m2. Among men 83% and women 86% had WHR > 0.9 (men) and 0.8 (women) respectively.

Among health facilities studied, OP and IP services were available in all except one govt. facility and none of them were providing interventional cardiology services.

Higher prevalence of CAD and risk factors noted in lower socioeconomic and lower educated group emphasize the need for more subsidized preventive and curative services for CAD.

AB_71 BLOOD PRESSURE AND BODY MASS INDEX AMONG ELDERLY IN RURAL ALLAHABAD - A CROSS SECTIONAL STUDY

Naveen K. H., S. Bali, M. A. Hassan, S. Dwivedi
Department of Community Medicine, Motilal Nehru Medical College, Allahabad, U.P, India

Background: Globally the proportion of people aged 60 years and above is increasing with majority of them living in developing countries. Hypertension is one of the important treatable causes of mortality and morbidity amongst them. Body mass index (BMI) influences blood pressure.

Methods: Cross sectional community based study was conducted in the rural areas of Allahabad during the period 2006 - 2007. A total of 411 elderly were selected from 2 blocks, Jasra in trans Yamuna area and Bahadurpur in trans Ganga area through multistage random sampling method.

Results: Mean (s.d) systolic and diastolic blood pressure was 134.2(21.9) mm of Hg, 136.6(23.7) mm of Hg and 77.7(11.9) mm of Hg, 77.2 (12.5) mm of Hg respectively among the elderly males and females. Prevalence of Hypertension was found to be 45.01 percent. Mean (s.d) BMI was 19.56 (3.38). Nearly 38.8 percent of elderly males and 44.7 percent of elderly females were undernourished (BMI <18.50). BMI was significantly and positively correlated with both systolic and diastolic blood pressure, correlation coefficient being 0.198 and 0.242 respectively and $p<0.01$ for both. The percentage of hypertensives was 31.6, 50.3 and 59.5 respectively with BMI less than 18.09, 18.09 to 22.25 and more than 22.25. This difference was statistically significant (?Re

Conclusion: High prevalence of hypertension and under nutrition among elderly necessitates more efforts towards prevention of under nutrition and control of hypertension.

AB_208 CARDIOVASCULAR RISK FACTOR DISTRIBUTION AND ITS CORRELATION IN ADOLESCENTS

Manu Raj[1], Sundaram KR[2], Mary Paul[1], Krishnakumar R[1]
[1]Pediatric Cardiology AIMS, Kochi, India [2]Biostatistics AIMS, Kochi, India

Background: Limited data is available from Kerala regarding cardiovascular risk factor distribution and its correlations in adolescents.

Objective: To examine the cardiovascular risk factor distribution and their correlations in adolescents in a sample from Ernakulam District, Kerala.

Methods: Eighty-seven adolescents in the age group 17-19 years (53 female and 34 male) enrolled for a graduation course were selected for the study. Measurements of height, weight, waist and hip circumference and blood pressure were taken using standard methods. Blood was collected after 10 hours of overnight fasting and analysed for fasting blood sugar and complete lipid profile. Overweight was defined as having a body mass index (BMI) > 25 and obesity as BMI > 30. Metabolic syndrome was diagnosed using modified Adult Treatment Panel III Criteria. Pearson correlations for 15 cardiovascular risk factors were analysed.

Results: Prevalence of overweight and obesity was found to be 29.9% and 6.9% respectively. Metabolic syndrome was identified in 3.4% of all adolescents and 11.54% of overweight adolescents. Among anthropometric parameters, weight showed maximum number of significant correlations with other risk parameters followed by body mass index and waist circumference. Of the biochemical parameters, HDL showed the maximum number of correlations followed by triglycerides and total cholesterol. Of all the parameters pooled together, weight showed the maximum number of significant correlations than others followed by body mass index and waist circumference.

Conclusions: Simple anthropometric parameters have shown superior cardiovascular risk correlations than others like lipid profile and blood pressure. In an environment of rapidly escalating obesity levels, these findings point to exponential growth of cardiovascular disease burden with serious public health implications.

AB_214 RISK OF CARDIOVASCULAR DISEASES AMONG SOUTH ASIANS IN NEW ZEALAND AND HEALTH PROMOTION MODELS FOR INTERVENTIONS

M Ekramul Hoque, Associate Professor; Samson Tse
Centre for Asian Health Research & Evaluation, School of Population Health, University of Auckland

Background: Asians are the fastest growing ethnic community in New Zealand currently at 9.2% of total population and are expected to reach at 15% by 2020. Till recently, Asian health data was not collected systematically in New Zealand leaving the risk unidentified. High risk of diabetes and cardiovascular diseases (CVD) among South Asians (SA) are major health concerns. Similar risks are traced back to their country of origin which is related to socio-cultural factors.

Objectives:

- To identify risk of CVD among SAs in New Zealand
- To compare the disease trend with that of the country of origin
- To discuss socio-cultural models to reduce risk

Methods: Information on Diabetes and CVD risks for Indian/SAs was collected locally and compared them with data from the country of origin to identify risks. Social and cultural models appraised to identify critical success factors guiding health promotion activities.

Results: South Asians are the 2nd largest sub-group among Asians in New Zealand. Significant proportion of them had low birth weight, and suffered from asthma, diabetes and heart diseases compared to New Zealand population. Risks of CVD are exacerbated by lifestyle and low access to health services. Migration and urbanisation deemed responsible supporting findings from their native countries. Socio-cultural factors discussed to formulate appropriate health promotion models.

Conclusions: Diabetes and CVD risks among SAs in New Zealand require monitoring. For better understanding, collaborative research with native countries would be beneficial. Appropriate health promotion activities customised for South Asians may reduce the risk.

AB_202 CHANGING TRENDS IN SMOKING AMONG MEN IN KUMARAKOM, KERALA: RESULTS FROM A COMMUNITY-BASED INTERVENTION PROGRAM

Meena Daivadanam[1], K. R. Thankappan[2], S. Sivasankaran[3]
[1]MPH2007, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences , Trivandrum, Kerala, India [2]Prof. & HOD, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences ,Trivandrum, Kerala, India [3]Addl. Professor, Dept. of Cardiology, SCTIMST, Trivandrum, Kerala, India

Background: Tobacco-related diseases are estimated to kill half a million people every year in India. Latest NFHS-3 figures reveal that 57% of men and 10.8% women in India use tobacco in some form or other. Here, we present the change in smoking trends among men between two phases (1.5 years apart) of an ongoing community-based intervention program for control of hypertension from Kumarakom in Kerala.

Method: Blood pressure, body weight, waist circumference and height were measured in 4955 and 2263 individuals above the age of 30 in phase 1 and 2 respectively [men: 2159 (phase1), 1110 (phase 2)]. Information was also collected regarding alcohol and tobacco use and other demographic variables using a pre-tested structured questionnaire.

Results: The overall prevalence of smoking among men had increased from 37.4% in phase 1 to 40.6% in phase 2. Similar trends were observed in all age groups except those between 30 and 39, schooling more than 10 years and current non-users of alcohol. Current alcohol users however showed a decline in smoking prevalence (72.1 to 57.8). Similarly all high risk groups towards whom our interventions were targeted like those with increased waist circumference, high BMI, Diabetes Mellitus and Hypertension, have shown a reversal in this trend,

Conclusions: While the overall prevalence of smoking has increased, high risk groups previously targeted through our intervention program have shown a decline. This is indeed encouraging and emphasizes the importance and the scope of educational interventions and appropriate life-style modifications.

AB_168 LIFESTYLE MODIFICATION BASED ON YOGA IN THE PREVENTION OF CHRONIC DEGENERATIVE DISORDERS

S. Ranjan[1], S.J. Passi[2], R.L. Bijlani [3]
[1]-Research Scholar, [2]- Reader in Nutrition, Department of Foods and Nutrition, Institute of Home Economics, University of Delhi, F-4 Hauz Khas Enclave, New Delhi [3] Formerly Prof. & Head, Department of Physiology, All India Institute of Medical Sciences, Ansari Nagar, New Delhi

Background: Lifestyle modifications (LSM) based on yoga has been shown to prevent the occurrence of chronic degenerative disorders (CDDs). The objective was thus, to find out the impact of yogic LSMs in the prevention of CDDs.

Methods: 39 patients (25 males, 14 females), aged 21-58 years were enrolled from the "Integral Health Clinic" - an outpatient facility at the All India Institute of Medical Sciences that conducts 8-day yogic LSM programmes. The intervention consisted of asanas (yogic postures), pranayama (breathing exercises); and lecture cum group discussion sessions (four) wherein the subjects were apprised of the need to modify their existing lifestyle practices. Data were gathered on their dietary intake, energy expenditure, stress scores, anthropometric, clinical and biochemical parameters at enrollment and after 8 weeks of the intervention using a pre-post design.

Results: Post-intervention data (available for 27 subjects) indicated a decrease in total fat and energy intake with an increase in the mean energy expenditure; and reduction in their stress levels. Body weight, BMI and WHR registered a small reduction; blood pressure, serum total cholesterol, LDL-C and LDL:HDL-C ratio registered a drop while HDL-C increased. However, the fasting plasma glucose and triglycerides levels also increased slightly. ANOVA revealed a significant increase in the energy expenditure ($p<0.01$) which was associated with the number of sessions attended and the duration of yoga undertaken.

Conclusion: The study is a pointer towards the beneficial effect of LSM in the prevention of CDDs as it did bring about a change in the awareness, attitude and practices.

AB_28 SUBSTANCE ABUSE AMONG STREET CHILDREN IN DELHI, INDIA

Arun Kumar Sharma, Vishal Sharma, Amit Jindal, Sonali Meena
Department of Community Medicine, University College of Medical Sciences, Delhi, India

Background: A large number of children run away from homes and live on the streets or railway stations and thus live a homeless life. Absence of parenting and existing peer pressure and economic crisis make them emotionally unstable. Such situations act as trigger for substance abuse followed by dependence. In this paper we examine the drug abuse behavior of homeless children living on the streets of Delhi.

Methods: A snow ball sampling method was used. Children were contacted at NGO run centers. Through these children, their friends were approached. Out of 71 approached, 64 children agreed to be interviewed. They were interviewed using a pre-tested, close ended questionnaire after being assured of confidentiality and secrecy. Counseling and referral to a de-addiction center was offered.

Results: Seventy eight percent were male and their median age was 15 years. Being beaten up at home (48%) and poverty (31%) were the commonest reasons for running away. Rag picking (62.5%) and part-time jobs (5%?) are their prime source of income. Fifty seven percent children earned Rs. 60 or more per day. Ever use of alcohol, smoking bidi, smoking cigarette and chewing of tobacco was reported by 54.7%, 81.3%, 78.1% and 81.3% respectively. Inhalation of eraser fluid was reported by 35.9% children. Using logistic regression, male sex and duration of street life were found to be significantly associated with addiction to 3 or more substances.

Conclusion: If suitable interventions are not undertaken, substance abuse has the risk of becoming a major threat to mental and physical health of these children.

AB_133 EMERGING TRENDS AND FACTORS ASSOCIATED WITH DEPRESSION IN KERALA

Indu Pillaveetil Sathyadas[1], Anilkumar TV[2], Ramdas Pisharody[3], Leela Ittyamma KR[1], Paul Russel[4], Raju D[2]
[1]Community Medicine,Medical College, Trivandrum, India [2]Psychiatry,Medical College,Trivandrum,India
[3]Nephrology,Medical College,Trivandrum,India
[4]Psychiatry,CMC, Vellore

Background: World Health Organization projects that across all ages and both sexes, depression will be the second leading cause of Global Burden of Disease by 2020. In the 15-45 year age group, depression now (2006) ranks second among the contributors of Global Burden of Disease. Even in countries such as USA, only 46-57% of those depressed were receiving healthcare treatment and 18-25% were adequately treated. It is well established that 60-80% of those depressed can be identified and treated at primary health level, but only 25% are identified. Depression is the commonest mental health problem leading to suicide. Kerala has a very high suicide rate of 27.2 per 100,000 per year. This study aims to find out the burden of the problem in primary care setting in Kerala and also to find the underlying factors.

Objectives: 1) To estimate the prevalence of depression among the patients in the age group 18-60 years attending general practice and 2) to study the factors associated with depression in general practice in the Kerala setting

Design: Cross sectional study

Setting: All the government and private hospitals located in the area of Medical College Health Unit, Trivandrum located at Pangappara were included in the study.

Population: Patients in the age group of 18-60 years attending general practice

Sample: 827 patients from government and private hospitals were included in the study.

Results: Overall prevalence of depression was 27.2%. It was higher in government hospitals (34.8%) and among women (34.6%) compared to private hospitals (12%) and men (16.4%). The paper also presents relationship between factors such as age, gender, type of family, marital status, level of education, employment, financial stress, husband's alcoholism, suicide attempts, and depression.

AB_70 MENTAL HEALTH MORBIDITY AMONG PLWHA IN THE STATE OF WEST BENGAL

Arup Chakrabartty[1], Suman Chakraborty[1], Anjana Nayek[1], Samrat Basu[1], Banhisikha Bhattacharya[2]
[1]Health Vision and Research, Kolkata, WB [2]FXB India

Background: Significant numbers of HIV infected people have, or develop mental health problems, that often adversely impact on their quality of care, and support services. Anxiety, depression and suicidal ideation were assessed to be commonest mental health ailments among 51 HIV-seropositive individuals in a study in South India. Similar evidence is lacking in West Bengal, in fact even for the entire country.

Objectives of the research study: To assess mental health status of PLWHA in the state of West Bengal

Methods: Data was collected from 204 PLWHAs (91 males and 113 females) of 18-45 years age, whose status has been known for the last 1-5 years. SRQ tool and a semi-structured interview schedules were used for interviews. SRQ contains 20 closed ended questions with scoring 1 for every "Yes" answered item. If total score is 10, the person is categories as psychotic. Interview schedule II was developed using DSM IV classifications.

Results: 26% and 12.9% of the PLWHAs showed non-psychotic symptoms and psychotic symptoms respectively. The result provisionally diagnosed 10.3% with depression; 9.8% with general anxiety disorder; 3.4% with Somatization Disorder; 0% with conversion disorders and 23.5% with suicidal thoughts, out of that 16.2% had attempted suicide. 8.3% and 1% respectively use alcohol and other harmful substances. 1.5% was provisionally diagnosed with schizophrenia whereas only one was paranoid.

Discussion: · Integrating psychiatric and psychosocial interventions in care and support services would definitely improve its quality. Therefore, relevant training modules on mental health issues could be developed

AB_182 PSYCHIATRIC MORBIDITY IN ELDERLY POPULATION ATTENDING PSYCHO-GERIATRIC CLINIC IN A TERTIARY CARE CENTRE -- A RETROSPECTIVE STUDY

Indu Pankajakshan Vijayanthi, Subha Nanoo, Raju Damodaran
Department of Psychiatry, Medical College, Thiruvananthapuram

Background: There has been a steady increase in elderly population all over the world and particularly in India. In Kerala, a higher life-expectancy increases the proportion of the elderly. Dementia, depression and psychosis are reported to be common problems in elderly population. In this context, a retrospective study on the psychiatric morbidity in elderly population who attended Psycho-geriatric Clinic at Medical College, Thiruvananthapuram over a period of eighteen months from March, 2006, was conducted.

Methods: Consecutive cases aged 60 years or above were included in the study. Socio-demographic data was collected using a proforma designed for the purpose. Detailed assessment of history and mental state examination was done by the first author. Diagnosis was made using DSM-IV TR criteria.

Results: A total of eighty cases were studied. Majority of the cases were females (63.75%), aged 60-69 years (62.5%), hailing from low socio-economic status (51.25%) and had poor educational background (65.0%). Depressive disorder and bipolar disorder (21.25% each) were the most common morbidities, followed by dementia (18.75%). Among those with no past history of psychiatric illness, dementia (30.56%) was the most common diagnosis, followed by depressive disorder (27.78%) and organic mood disorder (13.89%). Eight (10%) cases gave history of deliberate self harm, among whom 50% had depressive disorder. History of substance dependence - mainly nicotine and alcohol- was observed in 41.25% cases.

Conclusion: Mood disorders and dementia are common psychiatric morbidities in the elderly. With the increase in elderly population and increased longevity, these problems are emerging as major public health issues, warranting further research.

AB_38 PSYCHIATRIC MORBIDITY PATTERN AND SOCIO-DEMOGRAPHY OF GERIATRIC PATIENTS IN A TERTIARY CARE TEACHING HOSPITAL

Sabu K M
Health Information Management, MCOAHS, Manipal Unviersity, Manipal, India

Background: In all countries and especially in India, the elderly population is increasing and lack of nation-wide information on Psychiatric morbidity of elderly has become a major concern for health policy planners. The study aimed to determine the pattern of psychiatric morbidity and socio-demography of those aged 60 years or above.

Methods: A retrospective analysis of 445 patients diagnosed at psychiatry department of a tertiary care teaching hospital over a period of 5 years was done.

Results: Majority (n=260) were males and 66% patients were aged between 60 and 69years. The analysis reveals that 78.4% are married, 40.67% had only primary education, 33.5% are house wives, 53.3% belongs to middle economy category and 48.09% lives in extended family. The major diagnoses was mood affective disorders (39.10%), organic, including symptomatic mental disorders (20%) and Neurotic, stress-related and somatoform disorders in 13.03% cases. 53.03% patient reported stressors, 60.22% reported physical illness and 38.43% cases had a history of mental illness in family. Hypertension (18.65%) and Diabetes Mellitus (7.41%) were the major physical illness reported along with the psychiatric morbidity.

Conclusion: Psychiatric morbidities are rarely diagnosed in general clinics and there is a paucity of information on psychiatry morbidity in India. Similar studies are informative and useful for healthcare planners and demographers to understand the magnitude and pattern of psychiatric morbidity among different strata of population.

AB_52 PREVALENCE AND CORRELATES OF DEPRESSIVE SYMPTOMS AMONG INMATES OF OLD AGE HOMES IN KOTTAYAM DISTRICT

Arun R.[1], Kutty VR [2], Ravindran S[2]
[1]Insurance Medical Services, ESI Hospital, Ezhukone,Kollam, India [2]Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences

Background: Life transition from traditional settings to long-term care institutions like old age homes (OAHs) may have significant psychological impact on elderly. There is lacuna regarding their psychosocial wellbeing in those settings. Hence our objective was to estimate the prevalence and correlates of depressive symptoms among old age homes inmates (OAHIs) in Kottayam, Kerala, India.

Methods: A cross-sectional survey on 210 OAHIs (response rate: 95.7 percent [men/women: 69/132]) in the above settings was done in 2006, using a pre-tested questionnaire that had specific tools for assessing depressive symptoms, activities of daily living and social network. Univariate, bivariate and logistic regression analyses were done using SPSS version 14.0.

Results: The prevalence of depressive symptoms among OAHIs was 44.5 percent (95 percent confidence interval: 37.6-51.4). Adjusted for age, sex, duration of stay in OAH and history of mental illness to self or family members, it was found that being ever-married [Odds ratio: 2.44 (95 percent confidence interval: 1.03-5.77)], perceiving lack of care at own home as the reason for joining OAH [5.76 (2.06-16.11)], experiencing two or more stressful life events ever in life [5.78 (2.37-14.01)], having visual impairment [4.96 (2.06-11.97)], perceiving poor overall social network [3.82 (1.69-8.67)], and absence of current income [3.00 (1.27-7.10)] were statistically significantly associated with depressive symptoms.

Conclusion: The association of a high burden of depressive symptoms with modifiable factors calls for holistic and inter-sectoral approach for addressing the psychosocial issues of OAHIs.

AB_141 HOW ADOLESCENTS VIEW THEIR PARA SUICIDE

Prasanth Subrahmanian[1], Sankara Sarma[2]
[1]NHSRC, Thrissur, Kerala [2]Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences

Background: Para suicide is on the increase globally, especially among youths. It now constitutes a major public health problem. Strategies to reduce Para suicide or other violent behaviour by adolescents are often without the support of solid research. A study done to assess the motivational aspects of deliberate self-poisoning in adolescents. found that there is a discrepancy between adolescent's viewpoint and clinician's assessment. This study tries to explore the motivational aspects of adolescent behaviour in relation to their suicide attempts.

Objectives: The study attempted to describe the precipitating factors and pattern of suicidal behaviour associated with Para suicide and also to infer from the viewpoint of the adolescent, the support systems available to them. The study objective also explored whether psychiatric evaluations were carried out or recommended on the subjects by the hospital setting.

Methodology: The qualitative research methodology employed in this study uses an open interview technique with the help of an in-depth guide. An intent scale for suicide attempters (Pierce) was also used to quantify the intent factor. Whyte's directiveness scale was used to verify whether the research instrument (interviewer) is influencing the interviewee response.

Results & Discussion: Altogether 86 patients reported to the study centers, of which 52 consented to the study. There were 3 times as many girls as there were boys. The major precipitating factor for para suicide was family conflicts. Majority of the cases were impulsive. Poverty weakened family as a support system. Majority of the cases were not referred to the psychiatrist. Of the cases referred, 40% were diagnosed to have depression.

AB_20 ATTACHMENT AND SOCIAL TRAUMA OF YOUNG SURVIVORS OF GUJARAT EARTHQUAKE AND RIOTS (INDIA)

Manasi Kumar
Department of Psychology, University College London, London, UK

The proposed paper is an attempt to look into attachment trauma of children affected by both 2001-02 earthquake-and-riots in Gujarat. Attachment trauma can be defined as trauma that significantly disrupts the child's expectation of being cared about and looked after adequately by a caretaking adult through injury, separation, illness, death or other disruption of the primary caretaking relationship (Fonagy, 2005). Natural disasters and instances of social violence are precursors to not only social unrest but also to tremendous longstanding psychological distress to vulnerable population such as children. The paper is an outcome of a brief pilot research in Gujarat which is part of the author's ongoing Doctoral work.

At first, the paper evaluates recent disaster psychology literature to illuminate prominent mental health implications for young survivors of extreme trauma and disasters. Then, it highlights how child and adolescent mental health post disaster concerns are relatively underdeveloped and underreported areas in world wide disaster literature. Thirdly, the paper raises methodological and theoretical debates associated with working with children in disasters in developing countries.

With this background, the efforts of author's own pilot research are presented. The prime focus of ongoing research is to differentiate the trauma of earthquake-affected-children from those children who were affected by riots or social violence. Video-recorded Child Attachment Interviews and testimonies of children provide insights into attachment related issues and highlight various manifestations of trauma post-earthquake-and-riots in these children selected from different parts of Gujarat. The research is interested in knowing if the nature of the trauma impacts differentially on the attachment representations of the child. Few case studies help to develop the theme of attachment trauma further and seek to elaborate on nuances of ethnographically oriented psychodynamic research, work with economically-and-socially

marginalized child population in India, and the problems such as translation, coding and presentation of qualitative data obtained from field work.

AB_51 A CROSS CULTURAL REVIEW OF THE ETHICAL ISSUES IN THE MANAGEMENT OF PERSONS WITH DEMENTIA IN KERALA

Sowmini Cheruvara Vadakkathil[1], Raymond De Vries[2]
[1]MBBS, MPH, MA (Bioethics - Europe). Medical Research Officer, HRRC/ICMR, Department of Obstetrics & Gynecology [2]Ph. D., Associate Professor, Bioethics Program, University of Michigan, School of Medicine,

Background : This paper explores the diverse ethical aspects in the management and conduct of research in patients with dementia, compared between a developed country, the Netherlands in Europe and a fast developing region in India, viz., Kerala. These cross-cultural data are used to suggest newer ways and directions for addressing the ethical issues prevalent in such contexts in a mutually enhancing manner.

Methods: The study is an exhaustive review of the literature, of the different aspects of the subject matter under discussion. We present a comprehensive assessment of mainly the frequently cited and indexed articles on ethical issues in dementia care from Kerala, India, and the Netherlands.

Results: A seemingly influential role played by advanced directive is observed in ethical dialogue in dementia in the Netherlands, however any such mechanism is yet to evolve in Kerala. The legal and social setting in Netherlands has a compelling influence on physician's decision-making especially with reference to end of life issues, while any such discussion is hitherto unknown to the same setting in Kerala.

There are considerable differences in the perceptual patterns of dementia in the Netherlands and Kerala. The medical paradigm is dominant in the Netherlands, but, the awareness of dementia as an organic brain disease is low in Kerala. Institutionalized care is more common in the Netherlands and, home-based care is common in Kerala. Although home-based care has many merits, it is stressful to the caregivers.

Conclusions: A culturally suited implementation of the practice of advanced directive in Kerala will have clear and definitive medical, social, and economic impact. There are several demographic and philosophical reasons for the non-existence of advance directive in Kerala. Some of the limitations of this practice in the Netherlands, as shown by the critics, can be solved if relevant conceptual concerns also form part of the approach towards advance directive.

An adequately evolved public forum needs to be implemented in order to garner governmental support by effectively addressing the relatively reduced awareness of dementia in Kerala at the societal and policy-making level. The remarkable disparity between the Netherlands and the Kerala in dealing with the end-of-life issues, including euthanasia, warrants more philosophically and socially informed comprehensive ways of addressing these issues. The predominantly institutional model of care-giving in the Netherlands and the home-based care-giving in Kerala could strike some balance with each other suitable to the respective context, drawing the values and merits inherent in both models.

AB_228 SUICIDE AS A PUBLIC HEALTH EMERGENCY IN YOUTH IN INDIA - NEED FOR A COORDINATED RESPONSE

Anant Bhan,
Independent Researcher, Pune

The World Health Organization estimates that around one million people die from suicide each year - a global mortality rate of 16 per 100,000. Youth are at significant risk for committing suicide in most parts of the world.

India is among the countries in the world with high suicide rates- many suicides go unreported because of the stigma attached and lack of efficient data collection by health systems. Studies done in Vellore have reported the highest suicide rates in the world of about 148 per 100,000 in young women between 15 and 19. Suicides among youth are multi-factorial in causation ranging from educational pressure, conflict with parents, problems with relationships etc. to lack of support systems etc.

Youth suicides in India have not been seen as a significant public health problem by policy makers. The various policies dealing with youth in India do not discuss the mental health needs of youth adequately and the need to institutionalize suicide prevention programs, and develop sensitive response systems for

those attempting suicide, and their families. Also the criminalization of suicide in India makes those attempting to commit suicides, who are individuals in urgent need of help, be liable to prosecution under law.

The presentation will aim to highlight the issue and analyze the existing suicide prevention programs and response systems which deal with youth in India and other developing countries, run by governments and/ or civil society organizations. An argument for developing focused policies and coordinated programs to deal with the important public health emergency of suicides among youth in India will be made. A framework for such a policy would be formulated and presented.

AB_94 ASSESSMENT OF PERSONAL HYGIENE OF POULTRY BUTCHERS IN PATNA CITY, BIHAR

Rajesh Kumar[1], Biju Soman[2]
[1]AMCHSS, SCTIMST, Trivandrum, Kerala, India [2]Asst Prof, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences

Background - Personal hygiene of butchers is important in maintaining meat hygiene and preventing the meat as vehicle for zoonotic and infectious diseases. The objective of the study was to assess the personal hygiene practices of butchers who were involved in poultry butchering.

Methodology - Two chicken meat shops were randomly selected from each ward (Total Number - 57) from Patna city. One poultry butcher from each of these selected shops was interviewed using structured questionnaire to study their awareness. Activities related personal hygiene was observed using an observation checklist prepared by combining standard stipulations of Codex Alimentarius Commission and Export Inspection Council of India guidelines.

Result - This study revealed that out of total 113 shops included(1 was missing), almost one third shops were functioning in open space. The mean overall personal hygiene score was 5.34 (range: 2 - 11) out of the expected maximum score of 25. Structure of shop, ownership of shop, source of chicken, and possession of valid license were found to have statistically significant association with personal hygienic practices. Workload, as measured by the number of chickens slaughtered per day, had a positive correlation with personal hygienic practices. (Spearman's rank correlation - 0.43, P= 0.000). Only 5.3% butchers were found to be aware of importance of personal hygiene.

Conclusion - Butchers in good and adequate setting had comparatively higher workload and were maintaining better personal hygiene. There is imminent need of education of butchers about personal hygiene and meat hygiene so that zoonotic diseases are prevented.

AB_96 ALCOHOL USE A MAJOR PREDICTOR OF SICKNESS ABSENTEEISM AMONG INDUSTRIAL WORKERS IN KARNATAKA

Manjunatha R, K R Thankappan
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences

Background: - Study of sickness absences is a practical method to study workers' health status and occupational health hazards. Published data on predictors of sickness absenteeism in Karnataka are limited. Therefore this study was undertaken to find out the prevalence and predictors of sickness absenteeism.

Methodology: From a total of 2525 permanent workers, 353 (mean age 55.1 yrs, male 69.4%) were selected using stratified random sampling plan. Information on socio-demographic variables, sickness, and physical work environment related factors were collected using a structured pre-tested interview schedule. Linear regression analysis with number of man days lost per worker per year as outcome variable and logistic regression with sickness absenteeism as outcome variable were done using SPSS.

Results: The overall proportion of sickness absenteeism was 66.9% (95% CI: 62 - 71). In binary logistic regression analysis, ever users of alcohol had a 2.75 times higher odds of sickness absenteeism (95% CI: 1.36- 5.50) compared to lifetime abstainers. In multiple linear regression analysis, lower level of education ($p = 0.003$), ever use of alcohol ($p = 0.012$) and blue collar work ($p = 0.008$) were associated with sickness absenteeism. Blue collar workers experienced more health problems than white collar workers ($p= 0.05$), and reported more sickness absenteeism than white collar workers ($p = 0.013$).

Conclusions: Sickness absenteeism among the workers was high compared to published data from other parts of India. Efforts should be made to reduce alcohol consumption, and to detect and address health problems experienced by workers, focusing on blue collar workers.

AB_160 HEALTH PROFILE OF ADOLESCENT RURAL FEMALE USING BIOMASS FUEL

Vipin Bihari, Kesavachandran C, Mathur N
Epidemiology, Industrial Toxicology Research Centre, Lucknow, India

Background: Women's health is recognized as an essential of social and economic growth in India. Biomass fuels which is an important source of energy is a major contributor of burden of disease in India. These fuels emit fuel carbon including Greenhouse gases (GHGs) as well as health-damaging pollutants. Exposure to these pollutants causes several health effects especially in women and children.

Methods: A cross sectional study of fifty six literate rural adolescent biomass fuel users females (RABFUF) of Grade IV SE status was conducted for health examination, selected through a stratified random sampling technique.

Results: Forty three per cent subjects residing in ventilated pucca houses followed by mixed and kachcha houses. More than seventy five per cent RABFUF cook food in their living room. They utilized 0.5-2 hrs per day in kitchen for 0.5-10 years. The highest prevalence of morbidity was observed in central nervous system followed by hair problems/falling of hair and ocular problems. The least morbidity was observed in GIT and respiratory system. Few RABFUF had menstrual problems. LFT (Lung Function Test) showed decline in lung volume.

Conclusion: Prevalence of CNS and ophthalmic morbidity and restrictive type of respiratory abnormalities among the subjects may be due to biomass fuel exposure. These study subjects were recommended remedial measures and awareness about probable factors responsible for impairment of their health. Proper health care and awareness will definitely benefit the health of such subjects.

AB_116 HEALTH EDUCATION AS AN APPROACH FOR INJURY PREVENTION

Shailaja Tetali
Student, Karolinska Institute, Sweden

Introduction: Many unintentional injuries among children occur during un-supervised play. Falls contribute to 20%-30% of traumatic brain injuries in India. However, parental awareness about injuries is abysmally low. Injury prevention efforts, especially those involving school authorities are almost non-existent. A pilot effort to involve the Parent-Teachers' Association in injury prevention education is described here.

Methods: With the objective that parents and teachers may be the first care givers for injured children, the author conducted health education sessions among PatrentTeacher Association members in two schools catering to primary school children of middle class families in Trivandrum, Kerala. 62 members attended 3 sessions of 20 minutes each, in early 2007.

Results: Awareness of PTA members about injuries increased from a baseline assessment conducted before the first session. Possible emergency injury scenarios were described and first aid was taught for managing falls, near drowning, accidental ingestion of medicines, choking, burns, fractures. A handy list of important phone numbers was also given.

Conclusions: Members of the PTA were eager to learn and the school administration was supportive, although the author could not check if education led to better practice. WHO heavily emphasizes on prevention by educating all sections of society on the use of safety approaches in day-to-day life. Pediatricians should seize opportunities to teach children about safety at school and play . Education should be a sustained approach. Support from policy makers is critical to extend such pilot efforts to other schools, and to make a small but important contribution to injury prevention efforts in a developing country.

AB_161 THE PATTERN OF DISABILITIES IN THIRUVANANTHAPURAM DISTRICT

Reshmi Ramachandran, Sreekala K.N., Anish T. S, Sunil A. Salim
Community Medicine, Medical College, Thiruvananthapuram

Introduction: Disability is any restriction or lack of ability to perform an activity in a manner or within the range considered normal for a humanbeing. 16.15million persons(1.9% of population) in India suffer from some or other physical disability. We have conducted a disability survey in the Thiruvananthapuram district and have tried to find out different types of disability and their socio-demographic profile.

Objectives: To find out the prevalence of disabilities and to find out the pattern of disability among the disabled persons of Thiruvananthapuram district.

Methodology:Study setting- Thiruvananthapuram district

Study design-Cross-sectional survey

Study subjects-Disabled persons

1. Disabled persons were identified by Kudumbashree workers and they were mobilized in to screening camps.
2. The screening was done by Postgraduate students and house surgeons of the department of community medicine who got training for 1 day to screen the disabled by specialists.
3. The data was collected from 500 disabled persons using a semi-structured questionnaire.
4. Those persons who were found to be eligible for a disability certificate were referred to the medical board at block level, comprising of Orthopedician, physiatrist, psychiatrist, ENT surgeon and Ophthalmologist who examined them and issued certificates to persons with a disability of 40% or more, which will enable them to get job reservations and other benefits.

Results: Data collected were analyzed to find out age-wise and sex-wise distribution, educational status, occupation and various types of disabilities.

Conclusion: The results can be used for planning rehabilitation and other privileges.

AB_205 DETERMINANTS, PATTERN OF ROAD TRAFFIC ACCIDENTS IN KERALA, INDIA.

Godwin SK
Dept of Economics, KNM Govt. College, Kanjiramkulam, Trivandrum and AMCHSS, SCTIMST, Trivandrum

Context: Road traffic injuries are being ranked as the third major cause of deaths in Kerala State. Though the state's population forms 3 percent of the country's total, it contributes a disproportionate share in the gross injury burden with more than ten percent coming from Kerala annually and its accident rate is three times higher than the national average.

Objective: Assess the magnitude, distribution and impact of road traffic casualties in the State of Kerala, India.

Methods: Official information collected by the State Crime Records Bureau for the year 2005 January-December was analysed using SPSS 14.

Findings: Ernakulam districts leads in incidence of RTAs followed by Thiruvananthapuram. Incidence of RTAs is spread out evenly in all months with the month of November showing the highest (9.6%) and July, the lowest. Sixty-six percent of RTAs occurred during the day time that is from 6 AM and 6 PM. Distribution of fatal accidents across time scale indicates that there exists a higher probability of mortality if an RTA occurs during 0.00 - 6.00 (8.8%) followed by 18.00 - 24.00 (8%). National Highways which represents 7 percent of the total road length in the State bears 26.3 percent of the RTAs. In 6.5 % of cases, at least person died, while there were 0.3% accidents killing at least 3 individuals. Driver's mistake was the primary cause in 99.7 percent of RTAs.

Discussion: A negative correlation is noted between availability of road per vehicle and RTA. RTAs in Kerala are no more an urban phenomenon.

AB_206 FALLS AT HOME AMONG PRESCHOOL CHILDREN: A HOSPITAL BASED STUDY IN TRIVANDRUM.

Rekha M. Ravindran[1] MPH Scholar; Raman Kutty V [1] Professor; Hema R[2]
[1] Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum [2] Professor and HOD, Dept of pediatric surgery, Medical College, Trivandrum.

Background: Falls are the commonest unintentional injuries worldwide which is a serious public health problem in early childhood.

Objectives: To identify the pattern and the risk factors for falls in and around home among children aged one-five years attending a tertiary care hospital in Trivandrum.

Methodology: A hospital based case control study was done in various departments of Medical College Hospital, a tertiary care centre in Trivandrum. The study population included children aged one-five years. Cases and controls were selected according to the study protocol. A structured pre-tested interview schedule was used to interview the caretakers of cases as well as controls. Data was entered in Epidata 3.1and analysed in SPSS version 14.

Results: Fifty nine percent of the falls resulted in fractures. Thirty one percent of the total falls were from furniture. Fifty two percent of the cases were boys compared to forty eight percent of girls. Children with parents not aware about the increased risk of injury in children (OR: 6.36; 95% CI: 1.2-33.4), children with low birth weight (OR: 7.6; 95% CI: 1.4-39.9) and children whose mothers were more than 25 years of age at the time of child birth were found to be at higher risk for falls, when adjusted for other variables. Environmental factors like absence of side railings and stair gates for staircases increased the risk for falls in one to five year old children.

Conclusion: A number of socio-demographic characteristics were found to be associated with an increased risk of falls among children aged one-five years. The results indicate the relative importance of awareness about injuries among the parents to prevent injuries to their wards.

AB_225 EXPLORING THE PERCEPTION OF GUARDIANS ABOUT CHILD DROWNING IN RURAL BANGLADESH

Shamim Ahmed
Research & Evaluation Division, BRAC, Dhaka, Bangladesh

Background: Different studies show that infants drowned in ponds and ditches near their residence, and not in lakes or rivers at further distances from their residence.

Methods: Purposive sampling was done to select all drowning cases found in CIPRB ( ) surveillance area from October 2005 - September 2006. This study was mainly qualitative followed by a small scale quantitative survey. Data were collected through FGDs, community mapping, In-depth interviews, observational study and free listing exercise. The data were analyzed using SPSS 13 & ANTNROPAC.

Findings: In most of the drowning cases per capita monthly income was less than eleven dollars. Most of the drowning cases belong to nuclear families and because of poverty everyone needs to work to accelerate income which makes it impossible to supervise the child properly. One-third of the total cases who died were aged between five to twelve years and these drowning cases could easily be saved if the children had known how to swim.

Conclusion: Ditches and ponds have been identified as the major risk places for drowning. Drains created from tube well water have also been given importance by the individuals. Strong supervision and fencing around the water bodies could also be taken into consideration seriously in the community level as suggested by the guardians. This study suggests that organized supervision program should be started in every village of the country and for sustainability it should be incorporated with other programs like national nutrition program. This study also necessitates further community based research to explore the possibility of starting swimming training for all the children at the age of four.

HEALTH SYSTEMS

AB_151 HOW PUBLIC GOODS AND BIG BUDGET ITEMS WITHIN PUBLIC HEALTH INTERACT TO OPTIMISE RESOURCE USE

Alastair Fischer
NICE, London, UK

A "public good" in economics is defined as one which can be consumed by one person without preventing another person's consumption of the same good. Additionally, no-one can be excluded from the consumption of a true public good. The classic example of a public good is a lighthouse.

Most public goods are therefore provided by governments, but much of which governments do (for example, running the railways, hospitals and schools, or redistributing money from rich to poor) does not directly involve public goods.

Public goods offer effectively infinite economies of scale, and can therefore be extremely efficient ways for governments to spend money. It is suggested that the public goods of government regulation, of subsidisation and taxation of public health goods and bads respectively, and of the use of mass media will be among the most cost effective of all public health measures.

This presentation develops this theme, and shows how public goods, large budget items and the cost effectiveness threshold may be used to determine which interventions are likely to optimise the use of government resources within public health.

AB_164 ASSESSING FAIRNESS IN FINANCING OUTPATIENT CARE IN INDIA: REVISITING WHO'S FFC FRAMEWORK

William Joe, Udaya S Mishra, K Navaneetham
Centre for Development Studies, Trivandrum, Kerala, India

The paper revises the WHO's index of fairness in financial contribution (FFC) by addressing one of its major limitation regarding progressivity insensitiveness. In the revised index we introduce an element of progressivity in place of the equal burden principle adopted in measuring FFC. The general formulation of the progressivity principle has the allowance for fitting a desired progressive system while evaluating fairness in financial contribution. An empirical illustration of the index is presented using the data on India's outpatient health care expenditure. In particular we make use of the NSS sample surveys data on 'Morbidity and Ageing' (60th round) and Consumer Expenditure Survey (thin round, 60th round).

The revised index of FFC indicates substantial variation in the outpatient health-care financing within India. While the IFP score for India is 0.583, this varies across the major Indian states ranging between 0.463 in Bihar and 0.669 in Gujarat. The states of Gujarat, Tamil Nadu, Kerala and Punjab appear to be the fairer ones whereas the states of Bihar, Chhattisgarh, Jharkhand and Orissa are found to be least fair. We find that the estimated values of the modified index remain sensitive to catastrophic outcomes and provide valuable insight about the performance of the health system. Further, the index is found to be significantly associated with the major indicators of health outcome as well as statistics on health care facilities.

AB_186 MATERNAL HEALTH FINANCING IN GUJARAT PRELIMINARY RESULTS FROM A HOUSEHOLD SURVEY OF BENEFICIARIES UNDER CHIRANJEEVI SCHEME

Ramesh Bhat, Dileep V.Mavalankar, Prabal V.Singh, Neelu Singh
Indian Institute of Management, Ahmedabad

The objective of this paper is to provide preliminary analysis of information collected at household level from beneficiaries of the Chiranjeevi scheme and from those who have not used the scheme (non-user group). The total sample size consists of 656 respondents from 3 talukas of Dahod District. Of these total 656 respondents, 262 are Chiranjeevi clients and 394 comprise the non-user group.

Key findings of the study are:

- Most of the Chiranjeevi users have income levels less than Rs. 12,000 per annum.
- The expenditure incurred by non-user group on

index (recent) delivery at a private facility is Rs. 4000.

- The average expenditure incurred by the Chiranjeevi beneficiary on their previous delivery was Rs. 3070. On index delivery a Chiranjeevi client has spent out-of-pocket on an average Rs. 727 per delivery on medicine (self Rs. 297, child Rs. 358).
- The average amount saved by the Chiranjeevi client by availing the benefit of the scheme is Rs 3273.
- The average distance travelled by a Chiranjeevi client to reach the health care facility is 13.79 kms and the average time taken is 44 minutes.
- The average expenditure on transportation using mostly private transport by a Chiranjeevi client is Rs. 272.
- Private doctors have conducted 41 per cent of deliveries where as rest of the deliveries have been conducted by staff at the private health care facility under the Chiranjeevi scheme.
- ANMs have been the source of information to 55 per cent of Chiranjeevi clients.

AB_102 ENHANCING ACCESS TO PPTCT SERVICES AT PRIMARY HEALTH CENTRE LEVEL: ANDHRA PRADESH EXPERIENCE

Lincoln Choudhury[1], Akshya Mishra[2], Asok Kumar[2], Sebastian Ousepparampil[1], Sukumar[1], Sudhir Bunga[3]
[1]Catholic Health Association of India, Secunderabad, India [2] Andhra Pradesh AIDS Control Society, Hyderabad, India [3]Centre for Disease Control and Prevention-GAP India, Chennai, India

Background: HIV prevalence among antenatal mothers in Andhra Pradesh (AP) is 1.4%, (HSS 2006). Poor accessibility of public health systems poses the primary challenge in providing Parent to Child transmission (PPTCT) services in rural parts of the state. Primary Health Center Enhancement Project (PHCEP) is a public-private collaboration between AP State AIDS Control Society, Centers for Disease Control and Catholic Health Association of India, with objective of providing comprehensive HIV related services , including PPTCT, by placing a trained nurse in 266 rural PHCs.

Method: Data from the regular national reporting system on PPTCT between first two quarters January-March and April -June, 2007 was analyzed using spreadsheet.

Results: Between January and June 2007, 58598 antenatal mothers tested for HIV in PHCEP, which is 22% of the State PPTCT coverage, with 1.1% Positivity rate. The state Positivity rate was 1.3%.

The average number of HIV testing per working day was 6.2 and 8.4 in the state, while 8.06 and 10.04 in PHCEP respectively. Total number of positive deliveries in the state was 749 and 935, while 44 and 83 in PHCEP, with nurses conducting 95% and 72% of all positive deliveries, In addition mother baby pair receiving Nevirapine per 100 live births was100% and 95% in the state, and 100% and 94% in PHCEP in the two quarters respectively.

Conclusion: PHC Enhancement Project provides an example for resource poor settings, It demonstrates an increase in acceptance by community, by positive mothers and progress towards integration of the HIV services at PHC level.

AB_7 EQUITY ISSUES UNDER USER FEE IN MADHYA PRADESH

Sumit Shrimali
CAYMET Mauritius

Background: Madhya Pradesh is a pioneer in levying user fee through Rogi Kalyan Samities (RKS). A study was carried out in three districts of Madhya Pradesh to assess cost of care, delay in health seeking, facility preference, exemptions and equity issues under user fee arrangement.

Method: A hospital based study was done in Rewa, Jhabua and Mandla districts. Client interviews (294) were conducted in District Hospital, Civil Hospital and Community Health centers (CHC) in each district through pre-structured and pre-tested exit interview schedule.

Findings: In the study 80.8%, 14.4% and 4.8% of respondents belonged to poor class, middle class and high class respectively. Cost of care for outpatient and inpatient was found to be Rs 21.16 (SD- 20.54) and Rs 206.27 (SD- 126.15). Only 31.6% of clients sought health care within 24 hours of initiation of illness. 35.4% and 10.1% of patient did not seek care because they thought illness was not serious and because of lack of money respectively. 85.6% patient said that government charges are lower than private facilities but although 28.8% of client preferred private healthcare facilities because of better care (47.3%) and cost effectiveness (43.1%).

In relation to exemption, 26.8% were exempted from user fee and among this 79.1% said that exemption was not an easy process. 50.7% produced their BPL cards and 25.4% were exempted because they were visibly poor. It was found that 58.4% of poor paid user fee and 4.4% of non poor got exempted from user fee.

Conclusion: Study suggests fool proof exemption techniques are required in user fee arrangements. Without proper exemption arrangement user fee may create inequitable health among tribal populations because of high cost of care and low socio-economic condition.

AB_39 WOMEN'S HEALTH POLICY IN INDIA: CHOICES AND PRACTICE

Ramila Bisht
Centre for Health Policy, Planning and Management, Mumbai, Maharashtra

The paper attempts to critically analyze current directions in health policy which are relevant to women's health in India. Divided into three sections, the first section provides gender-differentiated description of health scenario in the country. Set against this background of the appalling state of women's health, it next examines the invasive nature of state policy that views women primarily as reproductive agents.

Scrutinising the concept of reproductive health as it emerged in the 1980s; it attempts to bring out its consequences for the practice of women's health. The two sections together emphasize that the issue of women's health is not only defined by their biological reproductive role. It argues that within the historical context of a harsh patriarchal system in which women's productive and reproductive capacities are stretched to the limit and debilitating impact this has on women's physical, mental and emotional well-being, women's health cannot be isolated from the societal and family web that enchains her. In the last section the health scenario since the 1990s is discussed in connection with the structural adjustment program.

Attempting to delineate the impact of reforms on women's access to and utilisation of health services, and its effects on health outcomes, the paper concludes that many of the identified dilemmas and disjunctures between policy intention and practice could be overcome if the health system of the country takes cognisance of the pre-existing structural determinants of inequity and make policies and programmes to address them to restore relatively better degree of gender equity.

AB_100 INCOME, INCOME INEQUALITY AND HEALTH IN INDIA

Aarushi Bhatnagar
Public Health Foundation of India, New Delhi, India

A large body of literature indicates that richer, better-educated societies are healthier than poorer and less educated ones. In addition, some evidence also suggests that greater income inequality is associated with adverse health outcomes. While India has shown substantial progress in achieving higher incomes and better health since independence, increasing inequities in income and health have been a grave concern for the country.

The objective of the paper is to examine the association between income, income inequality and health in India. The study uses a panel-data set up from 21 states in India covering a period of 17 years from 1983 to 1999-2000. Using a random effects regression model the paper tests the effect of income and income inequality on infant mortality rate and life expectancy while controlling for other socioeconomic factors.

The results show a significant positive relationship between per capita income and health but no significant association between income inequality and health. The results are consistent across rural and urban areas, with per capita income having a marginally larger impact on rural health as compared to urban.

It can be concluded from above that higher incomes are strongly associated with better health outcomes. Importantly, income inequality does not affect health outcomes at present. However, given the experience of developed countries, as India moves along the epidemiological transition this relationship may change.

AB_111 DISPARITY IN HEALTH: A CASE STUDY IN CHIRAKKARA PANCHAYATH

Anitha V
Lecturer, S.N.College, Sivagiri,Varkala

Background: Health is a fundamental human right. The Alma Ata declaration of 1978 focused on equity in health and health care. Kerala has made remarkable achievements in the key health statistics. Still there is a long way to go in for improving the health of the weaker sections, especially the dalit. Equity in health can be defined as striving to eliminate disparities in health between more and less-advantaged social groups (Braveman.P.A, 2003).

Objective: So in this paper an attempt is made to assess the disparities in health status of Scheduled Castes with other castes.

Methodology: The study is based on primary data collected with pre-designed questionnaire by applying random sampling techniques in Chirakkara Panchayath, Kollam, and Kerala. The important factors which influence health status of the households such as income, education, occupation, nature of disease, access to safe water, disposal of waste, etc. are collected. On the basis of ordinal scale each variable has assigned a number. Then a composite index of health status is constructed for the two groups according to the general formula used by the United Nations Development Program for the calculation of Human Development Index. Using the indices compares health status of the two groups.

Results and Conclusion: The study found that majority of the indicators are unfavourable to the Scheduled Castes. It is noticed that the reported case of chronic illness is very low among Scheduled Castes. However the health status is very low. The study concludes with some suggestions. It also stresses the importance of govt. programmes to weaker sections for the meaningful achievements of the slogan "health for all" by World Health Organisation.

AB_165 ON EXAMINING HEALTH INEQUITIES IN ARAB COUNTRIES

William Joe, Udaya S Mishra
Centre for Development Studies, Trivandrum, Kerala, India

Measurement of health inequities has gained prominence in recent times for its importance in locating specific identities or attributes associated with health deprivation. Besides, the disaggregated measurement of health outcomes has come in handy for recognizing inequities and serves to develop efficient interventions to address them. Further, understanding of health inequities help in making valid comparison of health outcomes over time and space.

Given the significance of examining health inequities, this paper advocates three new measures of health inequities and attempts at comprehending it across selected health indicators of Arab countries, the region which remained least focused in this regard till the

advent of Demographic Health Surveys (DHS). Given the common format of information collection in DHS, this exercise enables a comparison of the magnitude of health inequity across the selected countries namely; Egypt, Jordan, Morocco, Pakistan, Sudan, Tunisia and Yemen, based on three different measures. The health indicators under inspection relate to maternal and child health wherein the inequities are relatively higher for maternal health as compared with child health.

Among the selected countries, Egypt and Jordan seem to fare well compared with the others. The characteristic identities associated with larger inequities are maternal education and location. The paper concludes by providing a theoretical explanation (based on the demand for health framework) for the observed disparities in health outcomes.

AB_64 "BY PAPERS AND PENS, YOU CAN ONLY DO SO MUCH": VIEWS ABOUT ACCOUNTABILITY FROM GOVERNMENT DISTRICT HEALTH ADMINISTRATORS AND WORKERS

Asha George
Independent Researcher

Accountability in theory aims to curb the abuse of power. It is framed by some as straightforward management and by others as a clear cut rights issue. In practice, accountability is characterised by several nuances and tensions. Based on participant observation of service delivery, semi-structured interviews and qualitative survey responses, this article presents the views and experiences of government primary health care administrators and workers from Koppal district, Karnataka. In particular, I detail how those involved in delivering government primary health care perceive and negotiate two key human resource areas concerned with accountability: supervision and disciplinary action.

A number of disjunctures are revealed. Although supportive supervision efforts are acknowledged and practiced, implicit quid-pro-quo bargains that justify poor service delivery performance are more prevalent. Despite the enactment of numerous disciplinary measures, little discipline is observed. Significant negotiations exist via informal means that bolster the lack of formal authority or in other instances blunt the effect of formal rules with both positive and negative consequences. The nature of these negotiations also reflects how power is negotiated through corruption and elected representatives within the broader political economy context of health systems.

Thus from a managerial perspective, while accountability functions as a control mechanism, from a social perspective its character is determined by how power relations are negotiated with formal rules and relationships intertwined with informal norms and processes. These various dimensions of accountability need to be better understood if accountability is to function more equitably and effectively in health service delivery.

AB_11 MAJOR DRIVERS OF TECHNOLOGY ADOPTION: A CASE OF THE FOR-PROFIT HOSPITALS IN KERALA, INDIA

Rony Thomas Rajan
University of Kerala

Many factors drive the adoption of medical equipments by a for-profit hospital. Among these variables the influence of factors like the type of ownership, physician demand, size of the hospital, source of information on the new equipment, availability of third party payment facility and the existence of competition in influencing the adoption of technology is analyzed in the present paper.

The degree of adoption was measured using the availability/ non-availability of fourteen equipments used in respiratory medicine. The preliminary findings based on a sample of eighty seven for-profit hospitals in the state of Kerala, in India reveals the role of these variables in the adoption process. Type of ownership of private sector varying from single person headed hospital to limited companies shows varying levels of adoption patterns; it was found that, while the former shows lower rate of adoption the latter shows higher rates. Physician's demand for equipments tends to be the major factor influencing the adoption of medical technologies. This was found more prevalent when the physician is a "crowd puller". Size of the hospital, as hypothesized, is found to have direct positive relationship with adoption. In case of the source of information on new equipments, hospitals and physicians tend to depend mostly on the information provided by the vendors and colleagues using the equipments rather than on journals and conferences.

Availability of third party payments facility is found to have a positive relationship with the level of adoption. Contrary to the expectation that competition plays a major role in influencing the rate of adoption, another important factor namely the "business relationship" with other hospitals tend to be an influencing variable in the adoption process.

AB_56 SUCCESSES AND CHALLENGES IN ACHIEVING QUALITY STI SERVICES THROUGH A PRIVATE SECTOR FRANCHISE

Manish Ranjan[1], R. Pasricha[2]
[1]Franchise Department, Population Services International, New Delhi, India [2]Communications Department, Population Services International, New Delhi, India

Background: Population Services International, with funding from Avahan, launched the Key Clinic Network of 750 private sector allopaths to provide quality STI services to male clients of sex workers in four high HIV prevalence states in India. The goal of the franchise was to improve STI treatment of male patients through syndromic management.

Methods: Field teams mapped, recruited and branded private sector doctors with the highest STI caseloads and conduct bi-annual training backed by monthly support visits, quarterly newsletters and periodic technical letters. Pre-packaged therapy is provided to franchised doctors at subsidized rates.

Results: Evaluation of Simulated Patients Surveys shows the difference in the proportion of Key Clinic doctors adhering to selected standards of quality of care between December 2005 and December 2006.

- Prescribed or dispensed recommended treatment for Urethral Discharge increased from 36 to 56%. ($p < 0.10$) .
- Prescribed or dispensed recommended treatment for Genital Ulcer remained at 4%.
- Advised partner treatment improved from 17% to 39%. ($p < 0.10$)
- Encouraged condom use increased from 45% to 53%. ($p < 0.10$)

Additionally, the Key Clinic Network is now being seen as an entry point for public health causes with the national TB programme training them as referral points and DOTS providers, and other groups approaching PSI for VCTC and paediatric AIDS identification.

Conclusions: Health care provider performance can be substantially improved using social marketing and franchising.

AB_124 SITUATIONAL ANALYSIS OF HEALTH HUMAN RESOURCES IN THE PUBLIC HEALTH CARE FACILITIES IN ORISSA

Saji Saraswathy[1], Ashis Das[1], Thiagarajan Sundararaman[2]
[1]Public Health Resource Network, Orissa [2]National Health System Resources Center, New Delhi

Background: To find out the current health human resources in the public health care facilities in Orissa and to suggest corrective measures for the existing scenario.

Methods: We chose three districts, one each from the revenue divisions as a representative sample of the Orissa state. We collected data pertaining to the existing number of health human resources in the public sector from the Department of Health and Family Welfare from their records and registers and we visited a few of them in the field to corroborate with the secondary data. Then we compared them with the Indian Public Health Standards (IPHS) norm provided by the Government of India.

Results: In terms of the level of health care, human resources are 40% less at the primary, 60% at secondary and 30% at the tertiary level. The currently functioning percentage of professionals is nearly 50%, technicians 55% and auxiliaries 60%.

Conclusion We found that there is a significant short fall of human resources in the existing public health care facilities. We also found that there is a large discrepancy between the sanctioned posts and filled up posts as per the existing norms, and also the IPHS norms. We suggest augmenting the pre-service and in-service education load by increasing the number of seats in the existing medical colleges, nursing and paramedical training institutions as immediate requirement and increasing the number of training institutions in general by giving the underserved areas due importance in the long run.

AB_65 UNFREE RURAL HEALTH CARE MARKETS: RMP VIEWS FROM KOPPAL DISTRICT, KARNATAKA

Asha George
Independent Researcher

RMPs practise within a grey entrepreneurial zone, negotiating a market for curative commodities within the historical context of changing government policies. Despite practising in a formally unregulated environment, RMPs do not however operate in a free-for-all market. Village and health system social structures and the relations they engender regulate RMP practice, albeit informally and irregularly. These informal pressures are discussed in detail based on qualitative responses from 91 RMPs in Koppal district, Karnataka.

Despite popular perceptions of health providers acting indifferently or with impunity, when exploring the perspectives of health providers, they themselves reported being sensitive to numerous pressures against them. RMPs view these social pressures as mediating, in both good and bad ways, what is valued as medical care, how payments are made, who gets access to what kind of care, how favour is ensured and what happens when trust is violated.

This results in ambivalent health system outcomes. For those RMPs most vulnerable to these informal pressures, like village RMPs, an informal code of conduct provides responsive, but not necessarily clinically effective care. For more privileged RMPs, professionalisation efforts serve to buffer their vulnerability from a competitive and unregulated health care market, but also make them less accessible to more marginalised villagers. Understanding this heterogeneity linked to the market and social location of RMPs is essential to regulatory health policy.

AB_81 TOWARDS BETTER MATERNAL AND CHILD HEALTH IN INDIA - THE ROLE OF HUMAN RESOURCES

Krishna D.Rao[1], Aarushi Bhatnagar[1] Shomikho Raha[2]
[1]Public Health Foundation of India, New Delhi [2] World Bank

India faces important challenges in human resources for health, including fragmented health workforce information, vacancies in the public sector and geographic mal-distribution of health workers. Yet, there is scarce empirical analysis on these issues, This study examines the effect of the availability and composition of health workers on key maternal and child health and service utilization outcomes in India. Attention is paid to the availability of women health workers and its effect on utilization of maternal health services.

Data from the 61st round of the National Sample Survey is used to estimate the number of health workers, their density and composition across Indian states. Multiple linear regression is used to examine the association between key child health (infant mortality) and service utilization (immunization, antenatal care, attended deliveries) indicators after controlling for socioeconomic factors.

Greater health worker density is positively and significantly associated with lower infant mortality and better immunization coverage. Further, higher density of female health workers is significantly associated with greater use of ante-natal care and attended deliveries. After controlling for socioeconomic factors significant associations are found for infant mortality and antenatal care use.

The size of the health workforce is intimately associated with key health and service utilization outcomes in India. Importantly, the availability of female health workers is critical for improving use of maternal health services. These findings highlight the importance of addressing health workforce issues for achieving MDGs in India

AB_90 ASSESSING THE STATE CAPACITY FOR OPERATIONALIZING FIRST REFERRAL UNIT FOR EMOC SERVICES : GUJARAT

Parvathy Sankaraman, Dileep V Mavalankar, Bharati Sharma, Mudita Upadhaya
CMHS, Indian Institute of Managment, Ahmedabad, India

India has made progress in public health over the last 50 years but progress has been very slow in reduction of maternal mortality. There are various management issues and policy barriers for improving maternal health especially the operationalisation of Emergency Obstetric Care (EmOC) services and access to skilled care attendance during delivery. Our study reviews is based on one of the managerial challenges in maternal health services.

A mix of primary and secondary data collection methods were used to conduct the study. It was conducted in 6 districts of Gujarat covering 6 district hospitals, 6 FRUs, 6 community health centers and six 24/7 primary health centers. One of the main objectives was to assess the technical and managerial capacity at the state and district level for planning and implementing FRUs and monitoring the quality of EmOC services. It was observed that in spite of having most of the available man power and infrastructure as per FRU standards, the centers did not perform as expected. Though there is a system of monitoring available at the state and district level, they are not followed appropriately. However it was interesting to note that some centers (even in poor resource settings) were able to deliver services with high patient load. The study also explores cross cutting issues like leadership, motivation and appropriate planning.

The results from this study can be used to advocate the state and the district level top management to develop various monitoring mechanisms which will be used for the monitoring of quality, services and which in turn help in the smooth operationalisation of the FRUs.

AB_219 MEDICAL TOURISM IN KERALA: IMPLICATIONS ON COST OF CARE

Divya Bhagianadh, Sheethal Joy
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum

Background: Medical tourism is the provision of cost effective care to foreigners in collaboration with the tourism industry. India is growing as a leading medical tourism destination of the world. Kerala in particular is vying to be one of the top five medical tourism destinations in the world by 2010. The study tries to analyse the potential implications on health care cost for the domestic population in the wake of the growing medical tourism sector in the state.

Objective: The objective of the study was to analyse the potential implications of medical tourism on the health care cost for the domestic population in the state of Kerala.

Methods: In-depth interviews with key stakeholders in the state including policy makers, hospital administrators, health care providers and patients and a survey among the health care providers from the three cities of Thiruvananthapuram, Kochi and Kozhikode.

Results: The study results suggested that there would be an increase in the cost of care for the domestic population as a result of the emerging medical tourism sector in the state. The observation was that since increased investments are made to upgrade the facilities and technology to make the services world class, price for the same would also increase. The attempts to recapture the investments by the hospitals would automatically increase the cost of health care. One section of the stakeholders, mainly those from the private health care sector were of the opinion that cost of health care might come down due to the ready availability of high quality services in the hospitals in the state itself. The results of the survey were also pointing in the same direction with 84.3 percent of the respondents expecting an increase in the cost of health care due to the growing medical tourism sector in the State.

Conclusion: There is a focused effort on the part of various stakeholders to improve the medical tourism

sector in the state. There is an increased need for careful monitoring and proper regulations to protect the domestic population from the potential increase in cost of care.

AB_210 COMPARING INDIAN HEALTH POLICY RESPONSES TO POVERTY IN PRE AND POST LIBERALISED REGIME

Anu S Nair
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum

Background: Certain conditions of illness cannot be eliminated without adequately addressing poverty, which is characterized by deprivation, malnutrition, illiteracy, and disease squalid surroundings. Adverse effects of ill-health are greatest for the resource poor due to frequent illness, exclusive earning through physical work, and lack of savings to cushion the blow. Dealing with poverty is not a new situation to India and her 60 years of health policy strategies dealing with poverty would be a valuable lesson for many developing countries.

Objectives: The main thrust of the paper is to analyse and compare the strategies of national health policies to deal with poverty in pre and post liberalised era.

Methodology: Besides two exclusive national health policies, there were nine expert committees, 11 Plan documents, 60 budgets, and numerous government orders that pronounced policies pertaining to health. This paper reviews all these documents to find out the health policy responses to poverty and their outcomes. The methodology involves collection, compilation, and analysis of various national documents/reports/orders.

Results: Preliminary findings brought out five key health strategies that targeted poverty - (1) Reach health care services to disadvantaged populations, (2) Establish All India Health Service a la Indian Administrative Service to manage district health systems, (3) Create paraprofessional health workers within the community, (4) decentralised primary care system through effective community participation, and (5) National Rural Health Mission.

Conclusion: Major portions of results are yet to be analysed. Detailed analysis of what worked and what not will be presented in the conference.

AB_53 ALTERNATE MEDICAL PRACTITIONERS FOR RURAL INDIA - ADVANTAGE, CHALLENGES AND ISSUES

Joe Varghese[1], Roy Narayana Das[2]
[1]Ph D Scholar, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences , Trivandrum [2]Observer Trainee, Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum

The National Health Policy (2002) had stated that "while there is a general shortage of medical personnel in the country, this shortfall is disproportionately impacted on the less developed and rural areas". The shortage is especially damaging to the government health care system development efforts as people lose faith in government health services due to the frequent absence of an important health caregiver. Also, the non-availability of health workers especially for curative services has been cited as the most important factor which has resulted in backdoor entry of privatisation of government health services.

Objective: To review and identify suitable policy options for addressing the shortage of medical practitioners for rural government health services

Methodology: The paper reviewed policy initiatives to address the issue by various agencies. It also analysed the possibility of creating alternate cadre of health workers based on various national and international experiences.

Result: The efforts to deploy medical personnel in rural undeserved areas have been a loosing battle. No incentive or enforcement system attempted so far, has successfully deployed medical personnel in the rural healthcare services. The alternate policy options presently being considered are ranging from allowing the alternate systems of medicine practitioners to provide allopathic treatment and provide additional training for nurses to work as nurse practitioner in rural healthcare institutions to developing a new cadre of exclusive rural practitioners.

Conclusion: Based on several international and national level experiences and considering the present Indian context, we argue that one desirable option is to give additional training to nurse professionals to undertake a set of primary health care tasks, which are at present entirely the domain of doctors. The training of nurses has a strategic advantage as they are already trained in

allopathic stream and also have gained sufficient patient management skills as part of their nursing training.

AB_44 BLOOD SAFETY - A PUBLIC HEALTH PERSPECTIVE

Usha Kandaswamy, Jaisy Mathai
Division of blood transfusion services, SCTIMST, Trivandrum, Kerala, India

Background : Voluntary blood donors are the best source of blood that is needed for blood transfusions. As per the guidelines provided by Government of India blood is to be collected from voluntary, non remunerated blood donors. Other sources are best avoided, because the consequences of such practices are catastrophic and questions the very ethics of Blood Transfusion Services. Blood Safety is of prime importance in public health and building a strong voluntary blood donor base with repeat, regular, committed blood donors, is to be a public health responsibility.

Objective To examine the blood donation system in Kerala

Study design: A survey was undertaken for this purpose. A random sample of 300 patients and bystanders, were interviewed using pretested interview schedules . 300 blood donors (random samples) formed part of the study. Situational analysis was done in sampled

licensed blood banks and NGOs involved in health care.

Results : Replacement blood donation system was predominant. Patients and bystanders faced lot of problems in arranging for blood donors and desperate situations led to wrong practices compromising blood safety. A marked absence of focused NGO activity

Conclusion : There is a need for creating awareness and organized efforts to solve the problems of patients and attain "near zero risk " in blood safety. Considering Kerala's rich experience in decentralisation and sustained efforts to maintain public health services, there is much scope and potential for voluntary blood donation to be promoted as a major public health programme.

AB_101 PACIFIC RIM GLOBAL HEALTH FRAMEWORK (PRGHF): AN INTERDISCIPLINARY APPROACH TO HEALTH PROMOTION AMID RAPID CULTURAL, SOCIAL, AND ENVIRONMENTAL CHANGE

P.H. Palmer[1] , K.R. Thankappan[2], M.D. Gupte[3], S.A. Bhuiyan[4], C. Phitaya[5], C. A. Johnson[1]
[1]University of Southern California, Institute for Health Promotion and Disease Prevention Research [2]Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum [3]National Institute of Epidemiology, Indian Council of Medical Research, Chennai, India [4]National Institute of Preventive and Social Medicine, Dhaka, Bangladesh [5]Faculty of Public Health, Mahidol University, Bangkok, Thailand

Developing nations are grappling with dramatic increases in chronic diseases of lifestyle in response to cultural and societal transition fueled by economic growth, technological advances, and western influences. Meeting the challenge of this global phenomenon necessitates the development and implementation of innovative interdisciplinary programs of research and training that address the underlying behavioral, physiological, and environmental mechanisms responsible for disease and that foster practical approaches to improvements in health and well being. The PRGHF seeks to advance interdisciplinary global health research and training within and among collaborating institutions in the U.S., India, China, Sri Lanka, Bangladesh, and Thailand.

PRGHF partners collaborate in the development and dissemination of cross-disciplinary training programs to prepare a new generation of global health researchers, practitioners, and public health leaders. Emphasis in the PRGHF is on prevention and control of chronic, noncommunicable disease risk factors, including tobacco use and obesity. PRGHF activities entail both the creation of new and expansion of existing curricula and training programs that bridge partner institutions, thereby drawing from combined experiences and expertise to tackle challenging health issues. Training programs will range from certificate level professional training to degree programs. Curricula development and training activities will emphasize the relationship between lifestyle and health outcomes. This presentation will review the development of the PRGHF network and projects and progress to date.

AB_120 HEALTH RESEARCH IN INDIA: PREPAREDNESS, GAPS AND NEEDS

Sivan Y.S.
Community Medicine, PSG Institute of Medical Sciences & Research, Coimbatore, India

Health research output from a country, among other things, is an indicator of the investment in health sector by the public and private sectors, research capacity of professionals, overall quality of scientific journals, etc.

Objectives:

(i) Describe India's health research output from year 2000-2006;

(ii) Analyse the results in the context of a published study and the Draft National Health Research Policy (NHRP).

Methods: PubMed search was done to ascertain India's health research output from year 2000-2006. Percentage increase over the Previous Year (PIOPY) was calculated. The same was done for a few other developing and developed countries. Published studies were used for detailed information on India. Health and social indicators of these countries were sourced from publications of UN agencies to make a comparative analysis.

Results: India's health research output is abysmal compared to its share in the global pie. Results indicate that for India, the increase in terms of absolute number of research publications has been on the rise, though it is marginal in terms of PIOPY. Rise in terms of absolute number of abstracts and / or PIOPY has been fluctuating for some of the countries selected for comparison. The results and measures to be initiated to improve India's health research output are discussed by taking into account published studies on this topic, the Draft NHRP, the number of medical schools in the public and private sectors, medical education curriculum and the role of social sciences in health research.

AB_134 PUBLIC HEALTH RESOURCE NETWORK: CAPACITY BUILDING IN PUBLIC HEALTH THROUGH A DISTANCE LEARNING PROGRAM IN INDIA

Ashis Das
Public Health Resource Network, Orissa

Background: The thrust of the National Rural Health Mission (NRHM) in India is public health planning and management at the district level. The urgent need of technical sharing at the district level calls for massive capacity building. But the existing resources are inadequate to respond to the demand of the mission, which necessitates capacity building in an informal manner within a short span. The paper looks into such a move of capacity building through a distance learning program initiated by a civil society organization.

Methodology: The program is designed as a distance learning education program with 16 modules to be completed optimally within an 18 month period. This is supported by contact sessions and a lot of informal coaching. District or regional level meetings are organized to review the progress of every participant and provide ongoing support.

Results: By taking the primary health care approach as the cornerstone, it has built capacities of participants from the four least developed states (Bihar, Chhattisgarh, Jharkhand, and Orissa) in terms of socio-medical indicators. So far about 500 participants have been trained on issues like public health systems, materna! mortality, child survival, district health planning, control of communicable and non-communicable diseases, intersectoral convergence and community participation.

Conclusion: Examples from some resource constrained settings show that a distant learning approach to public health education can be successful to ensure strengthening of existing human capacities. If the initiative goes on realizing its targets, it can definitely complement to the goals of NRHM.

AB_220 KNOWLEDGE OF RISK OF TRANSMISSION OF INFECTIOUS DISEASES AMONG DENTISTS IN TRIVANDRUM CITY, KERALA

Simy Mathew, P.Sankara Sarma
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum

Background: Dentists are at a risk of transmitting infectious diseases in a dental setting, which may be transferred from the patient to dentist, dentist to patient or from patient to patient. There is risk of transmission of infectious agents via cross contamination through dental procedures. Transmission of microorganisms can occur in the dental settings through contact with blood or other body fluids, contaminated objects, an infected person or inhalation of airborne microorganisms.

Objectives: To assess the knowledge of infectious diseases among dentists in Trivandrum city.

Methodology: A descriptive cross sectional study was carried out among the dentists in Trivandrum city. One hundred and seventy four dentists (males 56.7 percent), who were members of the Indian Dental Association, Trivandrum Branch (80 percent of total dentists), were given self-administered questionnaires. Data was collected on transmission of infectious diseases in the dental setting, oral manifestations of AIDS etc. Analysis was done using SPSS version 14. 'p' value of less than 0.05 was considered to be statistically significant.

Results: Mean age of the sample was 33.5 yrs (Range 23 to 66 yrs). 53.2% were BDS graduates. Mean score of knowledge of infectious diseases was 23.7/30(23.6 - males and 23.8- females). Being a dental college faculty, working in the private sector and awareness of standard protocol were significantly associated with Knowledge of infectious diseases.

Conclusion: It is imperative from the study that dentists acquire more training and continuing dental education in the risk of transmission of infectious diseases in a dental setting.

POSTER ABSTRACTS

AB_29 ROLE OF MASS MEDIA IN DISSEMINATION OF AIDS AWARENESS AMONG URBAN HOUSEWIVES

Arun Kumar Sharma, Rahul Sharma, A T Kannan
Department of Community Medicine, University College of Medical Sciences, Delhi, India

Introduction: Vulnerability of house wives to HIV infection is demonstrated by rising HIV prevalence among ante-natal clinic attendees in Indian cities. Creating awareness for prevention of HIV/AIDS infection among them is a challenge. This study determines the role of mass media in spreading awareness about HIV/AIDS in urban housewives.

Methods: A pre-tested questionnaire was used for data collection from the housewives representing all the nine administrative zones of the city and four socio economic categories in each zone in Delhi, India. The respondents were asked to provide information about campaigns related to HIV/AIDS in the mass media that they have come across during past three months. A 10 point scale was used to assess respondents' level of awareness about prevention and spread of HIV/AIDS.

Results: Of the 920 respondents, AIDS campaigns were seen on television, radio, newspaper or hoardings by 62%, 30%, 36% and 47% respondents respectively. Knowledge about methods of prevention was significantly better among TV viewers (Odds ratio: 2.59; 95% CI: 1.95-3.43, $p < 0.001$). Logistic regression analysis showed that television viewing and looking at hoardings was significantly associated with better knowledge as compared to those listening to radio and reading newspaper after adjusting for socio-demographic variables.

Conclusions: Television and hoardings in public places should be used intensively to create awareness about AIDS among housewives.

AB_36 STUDY OF RISK FACTORS OF HUMAN LEPTOSPIROSIS IN NORTH KERALA

Asma Rahim,. Thomas Bina, Bindhu Vasudevan
Community Medicine, Calicut Medical College

Objectives:

1) Identify risk factors (behavioural and environmental) for Leptospirosis among study subjects.
2) Determine the different serovars in this area and the soil Ph.
3) Study the clinical features and lab parameters of study subjects

Materials & Methods: Case control design. Clinical and epidemiological details of 100 Leptospirosis cases (Fever,IgM positive Elisa) and 200 matched controls(Fever ,IgM negative ELISA) admitted in the hospital during the peak epidemic period were collected by the Investigator using a pretested ,semistructured questionnaire. Analysis of risk factors done using SPSS Statistical package.

Results and discussion: A predilection of cases among Male sex and Agriculture was predominantly noted. Major clinical symptoms noted were fever(99%), myalgia(96%), headache(81%), conjunctival suffusion(70%) and Jaundice(55%). Myocarditis, bleeding and CNS manifestations were less common. Presence of recent injury, past history of jaundice and mouth ulcers were highly significant risk factors in this study. Protective effect of foot wear ($P<.008$) and ventilation was noted. Rats in premises, contact with rice fields, ill maintained floor and roof, unsanitary well were associated risk factors too.

ESR, Leukucytosis increased Platelet count, rise in total and direct bilirubin, Serum Albumin , Blood urea and Serum creatinine were important lab parameters. Logistic regression for independent risk factors revealed a regression coefficient of 0.307. Predominant Serovar identified was Leptospira Autumnalis. Soil Analysis revealed a significant Alkaline Ph in areas of case reports.

Conclusion: This study has brought out significant Epidemiological risk factors which may effectively help in planning interventions from a Public health point of view. Need for carrying out animal studies for serovar identification and soil studies for PH analysis have been highlighted too.

AB_40 NEWER STRATEGY FOR DIAGNOSIS OF PULMONARY TUBERCULOSIS - A CASE CONTROL STUDY

Venugopal K[1], Nisha R.S[2], Sreelatha P.R.[3]
[1]Health Service, MCH Alappuzha, India [2]Dept. of Medical Education, Dept of CM, MCH, Alappuzha, India [3]Asst. Professor, Dept. of Pediatrics, MCH, Alappuzha, India

Introduction: -The strategy for detection of pulmonary TB in Revised National TB Control Programme (RNTCP) of India depends on 3 sputum sample examination in two days. As the Govt. sector has OP only in morning hours, a patient has to come on the second day for sputum examination. But majority of the patients under RNTCP are referred from evening private consultation of Govt./Private doctors. Thus, the first spot sample is taken only on next day of consultation when the patient attends the microscopic centre and the morning (2nd) and 3rd spot sample on the subsequent day. Here the study is trying to evaluate the efficiency of evening, morning and spot sample examination on the very next day of consultation.

Material & Method: - Study was conducted between 1st October 2005 to 30th May 2006. All the TB suspects consulted during the evening consultation of the District TB Officer were given two sputum cups and instructed to take an evening sample and one morning sample and to report the microscopic centre next day. 3rd spot sample will be taken at Microscopic Centre. Control group is selected by systematic sample technique from general microscopic attendees.

Result: - Out of the 60 cases registered under study group 16 were found positive (26%) and of the control group 10 were found positive (17%). Among the positive in study group 12 patient were male and 4 were females and all were male in control positives. A high positivity rate among study may due to high selectivity during private consultation. Statistical significance could not proved in this study (Z value 1.33 against significant value of > 1.96) because sample size.

Conclusion: - Providing sputum cups to the referring consultants / practitioner will result in more yield in TB case detection, helping early detection (one day), reducing patient expenditure and preventing spread by early institution of the treatment.

AB_50 'END MALARIA': DREAM OR REALITY? AN INSIGHT INTO LOCAL BELIEFS AND PERCEPTIONS

Pratibha Singh
Department of community outreach, Baptist Christian Hospital, Tezpur, Assam

The National malaria control program was launched in 1953 and since than it has had a mix of success and failure. Fifty four years later people are still dying of this preventable and treatable disease. Years of awareness campaigns and prevention activities have not been able to eradicate malaria.

Aim: To find out the knowledge, health seeking behavior and perceptions in the community regarding malaria.

Methodology: This is a qualitative study using two case studies and ten key informant interviews conducted in the Udalguri Block of Udalguri district in Assam.

Results: from the key informant interviews it was clear that peoples' understanding of the disease is limited. The informants said that malaria is caused by a virus which is spread by mosquitoes, and can also spread through contaminated food and water. Most of the people said that allopathic medicine does not work and so they prefer to go to a herbal medicine man or the local 'ojha'. They said that for fever "we take medicine from the local pharmacist, he gives saline then we become okay for few days then malaria comes again".

They said that the government provides medicines which are not effective and often there are no doctors at the health centres. They said that jaundice usually occurs after malaria and for that the best medicine is the 'ojha' medicine which they drink and also tie around the neck. The informants also said that a lot of children die once they get jaundice after malaria. The two case studies of children with malaria demonstrate these beliefs and perceptions.

Conclusion: People are still driven by ignorance and a mistrust of the government health system. Awareness is partial and overridden by beliefs and customs.

Recommendations: An education program with positive reinforcement and a strengthened health system are needed to help 'end Malaria'.

AB_62 RISK FACTOR ANALYSIS FOR THE OCCURRENCE OF STILL BIRTHS IN TWIN PREGNANCIES - A RETROSPECTIVE STUDY

Prasanna Samuel[1], B. Antonisamy[1], Mathews Mathai[2]
[1]Department of Biostatistics, Christian Medical College, Vellore [2]Former professor, Department of Obstetrics & Gynaecology, Christian Medical College, Vellore

Background: With the increasing use of assisted reproductive technology, the incidence of multiple births has been rising steadily over years. The adverse reproductive outcomes are much higher in twin or higher order pregnancy than in singleton pregnancies. The epidemiology of twin pregnancies complicated by stillbirth of one or both fetuses is a scarcely examined area. The objective of the present study is to determine the stillbirth rate and the risk factors for stillbirths in twin pregnancies.

Methods: This retrospective cohort study was conducted at the Christian Medical College, Vellore a referral hospital. The birth registries of all consecutive twin pregnancies between 1991 and 2005 were reviewed. Data on maternal risk factors and socio demographic factors were extracted. Logistic regression analysis was used to identify principal risk factors associated with stillbirths in twin pregnancies.

Results: There were a total of 1635 twin pregnancies during the 15 year study period. The incidence of stillbirth was 86.2 per 1000 twin pregnancies (95% CI: 71.4-98.6). Multivariate analysis using logistic regression revealed monochorionic monoamniotic placentation (OR=9.1 95%CI: 3.7-22.4), preterm birth (OR= 2.8, 95% CI: 1.7-4.7), maternal age <35 years (OR=2.3 95%CI: 1.00-5.2) and maternal illiteracy (OR= 1.77 95% CI: 1.00-3.3) to be significant risk factors for still births in twin pregnancies.

Conclusions: The diagnosis of monochorionic monoamniotic gestation should be made early in pregnancy so as facilitate timely referral and proper management, to reduce chances of stillbirths in twin pregnancies.

AB_72 EFFECTIVENESS OF TOT TRAINING STRATEGIES FOR IMPROVING THE LEVEL OF AWARENESS AMONG WORKPLACE EMPLOYEES

Shrihari JS[1], Chakrabartty Arupkumar[2], Chakraborty Suman[2], Nayek Anjana[2], Mukherjee Devlina[2]
[1]CGHR, Bangalore, India [2]Health Vision & Research, Kolkata, India

Introduction: Targeted interventions among high risk groups have always been a priority of West Bengal State AIDS Prevention and Control Society. The state has been looking for an effective work place intervention model. In this effort, we conducted an action research to test the effectiveness of two tier training strategies such as TOT (Training of Trainers) and TMT (Training by Master Trainers) towards raising HIV/AIDS awareness level among employees in work places.

Methodology: Six organized work places in and around Kolkata were randomly selected. A baseline and end line survey was conducted among 111 employees using a field-tested questionnaire at the beginning as well as after completion of the intervention. Based on a standard training module, TOT was conducted to prepare a resource pool of 27 Master Trainers, who in turn trained other employees (for 11 months). The trainings were supplemented by IEC materials, spreading key messages through wall paintings, and orientation of stakeholders about Work Place Intervention policy.

Results: Respondents who have heard about HIV/AIDS were 87.4% and 97.8% before and after intervention respectively. The knowledge about HIV transmission routes increased by 22.6%-61.1% and awareness level about VCTC (Voluntary Testing and Counseling Centre) increased by 66% at the end of the study. Misconceptions like spreading of HIV through mosquito bite came down by 31.8%.

Conclusions: The two tier TOT training approach highlights the effectiveness of multi-prong strategies for raising awareness level among the employees in work places. Therefore we are recommending statewide replication of the model in West Bengal.

AB_73 CONTROL OF CHIKUNGUNYA EPIDEMIC IN KUNNATHUKAL PANCHAYAT.A REPORT OF INTERVENTION BY STUDENTS OF DR. SOMERVELL MEMORIAL CSI MEDICAL COLLEGE, KARAKONAM

Regi Jose, Jeesha C Haran, Jessil Abraham, Bibin Paul
Dr.SMCSI Medical College Karakonam

Background: Kerala suffered from an epidemic of fever which was later confirmed as Chikungunya fever transmitted to humans by the bite of infected mosquitoes. Dr.SMCSI Medical College Karakonam had confirmed cases of chikungunya in 2006. In collaboration with the Panchyat and PHC, Dept.of Community Medicine organized a Mosquito control program in the Kunnathukal Panchyat in October 2006.

Objectives: To improve the awareness of people regarding mosquito control and to do source reduction in the whole panchayat to reduce the mosquito borne diseases.

Design: Experimental design; Community Intervention programme.

Methods: The area holds a population of 50000 in 10000 households distributed in 20 administrative blocks. All houses were visited by 600 medical and nursing students in one week. They inspected the premises of the houses for mosquito breeding places and educated the members regarding reducing mosquito menace and subsequent diseases. All uncovered septic tank outlets were covered by nets. A post intervention survey was carried out one month and 11months later.

Results: Significant increase in the knowledge of people in preventing mosquito borne diseases and a positive change in their behavior that continues after one year of the programme. Significant decrease in the vector indices and the reported mosquito borne diseases but the intervention could not reduce the number of people affected with fever in 2007.

Conclusions: One time massive intervention programme could be used in controlling vector borne diseases during an outbreak and for creating awareness among public.

AB-83ADVERSE EFFECTS FOLLOWING IMMUNIZATION WITH JAPANESE ENCEPHALITIS VACCINE (SA14-14-2) AMONG CHILDREN

Ranganath B.G[1], Hiremath.S.G2
[1] -Associate Professor, Dept of Community Medicine, Sri Devaraj Urs Medical College, Tamaka, Kolar [2]- Professor, Dept of Community Medicine, Sri Devaraj Urs Medical College, Tamaka, Kolar

Background: Use of a live attenuated JE Vaccine (SA14-14-2) in the JE control program in India from 2006 is a new experience for health personnel. There are no studies on AEFI with this vaccine in India. This study observed the incidence of AEFI among children vaccinated with SA14-14-2 Vaccine.

Methods: 1094 children aged 6-10 years who had received the vaccine in the JE campaign in July 2007 in the communities served by PHC Sugutur in Kolar District, were followed over four weeks. A structured questionnaire including a brief physical examination was used to document primarily the minor AEFI and also symptoms suggestive of anaphylaxis and encephalitis. Surveillance was maintained during this period on the two major hospitals in Kolar to document any hospitalizations that followed the vaccination campaign in children from the PHC area.

Results: The mean duration of follow-up was 28 days. The AEFI were 4.91 and 2.93% for fever, 13.66 and 10.14% for pain and tenderness at injection site and 0.44 and 0.30% for nausea and vomiting on the third day and in the end of first week respectively. No events related to anaphylaxis and encephalitis was reported. None of the children followed up was hospitalized after the vaccination during the follow-up period.

Conclusions: The vaccine is relatively safe when used on children in the JE campaign. Awareness and training of the health personnel regarding the AEFI may be useful in creating community acceptance of the JE vaccine campaigns and management of the AEFI at the community level.

AB-131 CHALLENGES IN COMMUNITY MANAGEMENT OF AN EPIDEMIC, AN EXPERIENCE FROM KERALA

Tony Lawrence, Ajay Rajan, Anish T.S
Community Medicine, Medical College Hospital, Trivandrum

The epidemic of Chikungunya and Dengue fever has swept over Kerala. The out break was rampant in many districts especially Pathanamthitta, Kollam, Kottayam and Thiruvananthapuram. Our main objective was to find out the way in which the Kerala Community was responding to the crisis and to find out the boons we have exploited as well as the hurdles we are facing.

The study method adopted was In-depth interviews, Focus Group Discussions, Surveys, News paper reviews etc .The study population included Administrators, Clinicians, Public health personals, Entomologists, Local Self Governments, Media and Public.

Some of the positive effects of this epidemic on the health system that was observed were the ability of the health system to mobilize En-Block in a satisfactory way, integrate and work with NRHM, LSGs and NGOs, boost the Vector monitoring and surveillance system. Some of the pit falls in the management of this epidemic were less attention was given to preventive measures, fake reporting of vector indices, problems faced in waste management particularly plastics, poor epidemic intelligence wing for DHS, lack of standard treatment protocol etc. The opportunities to be explored are sensitization of the health system, Academic Community and the political leadership, standardization of vector studies, preparedness for future epidemics etc.

Conclusions: The viral fevers transmitted by Aedes mosquitoes are becoming endemic in Kerala. All the stake holders in the community including Government, Academicians, Clinicians, Public health personnel, Entomologists, Local Self Governments, NGOs, Media, Students and Public should playtheir role in this respect for effective management of the epidemic.

AB_139 TREATMENT OUTCOMES OF PATIENTS UNDER RNTCP DOTS IN KOLLAM DISTRICT, KERALA.

Shibu Vijayan
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum

Background: DOTS as a strategy was introduced to the Tuberculosis control programme in the District of Kollam, Kerala in 2000. The objective of the study is to identify the treatment outcomes of a cohort of new smear positive pulmonary tuberculosis patients registered under RNTCP- DOTS in the first quarter of 2005 after completion of treatment and after 18 months and to analyze the factors associated with the various treatment outcomes.

Methods: Cross sectional study of cohort. The outcomes were assessed at the end of the DOTS treatment after a duration of seven months from the start of treatment and the patients were interviewed at the end of eighteen months after completion of DOTS. Among 241 patients registered for DOTS, excluding the dead and lost follow up cases, 193 patients were interviewed using a pre structured questionnaire. Of the 193 patients, 148 (76.7%) were males.

Results: At the end of seven months, a 85.9% cure rate was noticed. The death rate was 8.3%. In bivariate analysis; younger age group and not consuming alcohol more than twice a week was associated with a favorable outcome (?2, $P < .05$). After 18 months 192 (90.9 %) were disease free, 18 (8.5%). Relapse 1 relapse/334 person years. Death rate is 16.5%.

Conclusion: The high cure rate and low relapse and default rates among the cohort of patients who had undergone DOTS may be due to the effective program implementation including retrieval of defaulter and timely follow up of those on treatment .There is a need to strengthen the alcohol cessation activities in RNTCP. Death rate of 8.3 percent requires further exploration.

AB_170 SEXUAL AND REPRODUCTIVE HEALTH ISSUES OF RURAL WOMEN OF BARODA DISTRICT, GUJARAT STATE.

Neelu Singh
Research Associate, Indian Institute of Management, Ahmedabad, India

Introduction: It was observed that rural women lacked access to proper sanitation facilities, were hesitant to discuss SRH problems, unaware of SRH rights. Thus, it was decided to study SRH issues of rural women. This paper discusses the same and explores factors inhibiting rural women from availing healthcare facilities and restrains them from accessing their SRH rights.

Objective:

- To study SRH issues of rural women.
- To explore factors inhibiting rural women from accessing healthcare facilities. o To develop approaches to improve the Health seeking Behaviour and to protect the SRH rights of these women.

Methodology: The study is based on 75 case studies.

Findings & Conclusions: 98.67% respondents were below 20 years at the time of their marriage. 96% use cloth to sustain their menses, 68% use one cloth per day, 93.34% wash the used cloth to reuse it. 31% feel ashamed to dry the washed cloth in sunlight.

All respondents lead an active sexual life, 37 % have sex against their wish with their marital partners. Also, half of them have symptoms indicating STIs, of which only 28% consulted a Doctor. The patriarchal structure of society, traditional gender roles, dependence on spouse and an 'attitude of neglect', towards their own health, inhibit the rural women from leading a healthy sexual and reproductive life. They should be made aware of their SRH rights and developing culture sensitive, community based approaches can help women access these rights.

AB_175 TITLE: NOVEL RETENTION STRATEGIES FOR YOUNG WOMEN PARTICIPATING IN REPRODUCTIVE HEALTH RESEARCH IN INDIA

V Chandrasekaran[1], K Krupp[1], C Karat[2], J Klausner[3], A Reingold[4], P Madhivanan[4]
[1] Public Health Research Institute, CSI Holdsworth Memorial Hospital, Mysore, India [2] Department of Obstetrics and Gynecology, CSI Holdsworth Memorial Hospital, Mysore, India [3] San Francisco Department of Public Health, USA [4] School of Public Health, University of California, Berkeley, USA

Background: In India, retaining women in cohort studies presents unique challenges for researchers conducting reproductive health research. We present strategies for improving retention and reducing attrition among reproductive age women in Mysore, India.

Methods: A prospective cohort study was conducted to investigate the relationship of vaginal infections to acquisition of HSV-2 among sexually active women between 15-30 years. Participants were enrolled from the community for a six-month study with quarterly followups. Participants were interviewed with a standardized questionnaire and were evaluated for RTI's including T vaginalis, bacterial vaginosis, vaginal candidiasis, N gonorrhoeae and HSV-2 antibodies.

Results: Retention strategies included intensive community outreach involving community leaders; creation of child-friendly clinical sites; providing refreshments; using unique queuing strategies to reduce waiting time; creation of communication materials in the local language geared to low-literacy population using pictures; use of community members to track participants for follow-up visits; and provision of transportation to encourage participation. With 898 participants, the cohort retention was 94.4% at 3-months and 90% at 6-months. Common reasons for attrition included shifting residence (17.8%), wrong addresses (13.3%), pregnancy following initial visit (13.3%), family's uncooperativeness (13.3%), and fear of blood draws as cause of illness (23.9%). Lower education of spouse, living with in-laws, no independent income, partner's occupation, and low income levels were associated with loss to follow-up.

Conclusion: Acceptable retention rates can be obtained for cohort studies despite challenges typically faced in India. Partner and community involvement is critical to reducing attrition among young married women participating in reproductive health research.

AB_197 EMPOWERMENT OF YOUNG PEOPLE AGAINST HIV/AIDS

Tej Ram Jat
Centre for Health Equity, Jaipur, Rajasthan

Background: Young people in India are at persistent risk for HIV infection. By the end of May 2005, the total number of AIDS cases reported in India was 109, 349 of whom 37% were diagnosed among people under 30. Studies show that AIDS no longer affects only high-risk groups or urban populations, but is gradually spreading into rural areas and the general population, which is a growing challenge in India.

Method: The Young Peoples Initiative Against HIV/AIDS Program was implemented in 80 tribal villages of Chittorgarh district of Rajasthan from November 2003 to November 2006. The aim of this project was to empower young people through training, peer education, recreation activities, counseling and other skills development programs so that they can be eabled to take preventative measures against HIV/AIDS. The program incorporated awareness generation, behavior change communication, condom promotion, voluntary counseling & testing. It helped improve access to health services through increased interaction between young people and health care providers.

Results: The program mentored young people to lead responsible sexual life and made them aware of other methods of HIV infection. The program showed that significant improvement in any situation is possible if it is wanted and brought about by the people themselves.

Conclusion: The spread of HIV/AIDS among young people can be halted by providing them with necessary assistance to enhance their knowledge, skills and changing their behaviour through peer education. Revitalization of young peoples self esteem and gender sensitivity must be in the heart of all initiatives against HIV/AIDS.

AB_240 ROLE OF INDIAN MEDICAL ASSOCIATION IN THE PUBLIC-PRIVATE MIX INITIATIVES OF THE REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME, INDIA.

S.S.Lal[1]-Member; K. Hemachandran[2]-Member; R.V. Asokan[1]-Chairman
[1]National Working Group, IMA - RNTCP Coordination [2]State Working Group, Kerala State IMA-RNTCP

Background: The Revised National Tuberculosis Control Programme (RNTCP) of India initiated the Public-Private Mix (PPM) activities from 1999 in which the Indian Medical Association (IMA) was a major partner.

Methods: Review of the major PPM initiatives in which the IMA had major role.

Results: The PPM pilot projects in 2000 in Kannur (Kerala) and New Delhi, in which IMA was the major partner of RNTCP, proved that the involvement of private practitioners could contribute to increase in TB case notification. The national guidelines for the involvement of private practitioners were developed mainly based on this experience. The IMA in 2004 declared nationwide support to RNTCP. The IMA in 2004 with support from WHO India office initiated state level projects in Kerala. Several other states followed this model. The IMA represented India in the international committee for drafting the 'International Standards for Tuberculosis Care'. IMA took the initiative to form a national coalition of Medical Professional Organizations to support RNTCP. The Global Funds for AIDS, TB and Malaria (GFATM) funded IMA through the Government of India for PPM projects in five states. IMA's role in scaling up of PPM in RNTCP has been demonstrated as a successful model. Useful lessons have been learnt and concerns have been raised about the future and sustainability.

Conclusion: The IMA as a major partner of RNTCP and has played a major role in initiating and scaling up of PPM in RNTCP which has been demonstrated as a model.

AB_12 HEALTH EFFECTS OF YOGA AND WALKING ON BMI AND BODY FAT PERCENTAGE

C Kesavachandran, V Bihari, N Mathur
Epidemiology, Industrial Toxicology Research Centre, Lucknow

Background: The aim of this study was to find out the relation between different types of physical activity (yoga, walking, yoga and walking together and no physical activity) with different grades of BMI, body fat % and the prevalence of symptomatic and asymptomatics in the study population.

Method: A cross sectional study on one thousand one hundred and eighty six healthy urban male volunteers having similar socio economic status were recruited from the city limits of North India for the study during June-August,2006. Height and weight were recorded for each participant to determine their BMI. Body fat percentage and weight was measured using a Body fat monitor.

Results: The mean body fat per cent among symptomatic subjects (24.8 + 5.4) was significantly higher ($p < 0.01$) compared to asymptomatics (23.0 + 6.3). The mean values of BMI were also found to be significantly higher ($p < 0.05$) among symptomatics (24.8 + 3.5) compared to asymptomatics (24.3 + 3.9). The risk of high body fat percentage was significantly reduced (Relative Risk =0.78, $p < 0.05$) among subjects who were doing both walking and yoga compared to subjects not involved in any physical activity.

Conclusion: Walking together with yoga performance was found to be beneficial for better health and maintaining normal BMI and body fat percentage. This conclusion should not be interpreted to discuss the health risks associated with overweight and high body fat%, but rather to emphasize the moderate influence of physical activity and physical fitness on these risks.

AB_13 HIDDEN PSYCHIATRIC MORBIDITIES AND GENERAL HEALTH STATUS AMONG MSM AND OTHER CLIENTS OF A STD CLINIC

Soumya Deb, Aparajita Dasgupta, Ranadeb Biswas
All India Institute of Hygiene and Public Health, Kolkata, India

Background: Visitors of STD clinic are a very vulnerable population whose Socio-demographic characteristics and status of physical, mental and social health deserve special attention.

Methods: A descriptive, observational, comparative cross sectional study was conducted among 108 Men having Sex with Men (MSM) and 96 other male clients who attended a STD clinic in Kolkata over a period of 6 months. The aim was to find out their sociodemographic characteristics, hidden psychiatric morbidities and general health status using Goldberg's 28 item General Health Questionnaire with a Likert scale of scoring. Lower the score better was the health status.

Results: Most (25%) of the MSM were students while, majority (51%) of the other male clients were drivers. Proportion of MSM living in the city for less than 2 years was more compared to other male clients (22.2% vs. 12.5%). The MSM elicited a significantly better physical health status [mean score 16.4 +- 3.5] than the other male clients [mean score 18.1 +- 4.7]. Among the MSM, anxiety and insomnia [mean score 9.7 +- 4.2] and severe depression [mean score 4.8 +- 4.4] was significantly more than other clients [mean score 7.0 +- 4.8 and 3.6 +- 4.4 respectively]. More MSM were found to be suffering from social dysfunctions [mean score 16.8 +- 3.8] than the others [mean score 14.9 +- 4.0]. The net score was significantly more among MSM as compared to others (33.8 +- 13.3 vs. 29.2 +- 11.8) with majority of the MSM (63.9%) crossing the threshold score of 24.

Conclusion: Clients visiting the STD clinic especially the MSM were apparently unhealthy not just physically but also mentally and socially and special emphasis needs to be given on the care of these vulnerable groups.

AB_15 PSYCHOSOCIAL PROBLEMS OF MASTECTOMIED WOMEN FOR CARCINOMA BREAST

Niju ML[1], A.V.Purushothaman[2]
[1]- Final Year Medical Student, Pariyaram Medical College [2]- Dept of Surgery, Pariayaram Medical College

Breast cancer is a typical example of a disease linked to mental and physical health, considering its high mortality and the physical and mental problems it causes and the cost of its treatment. A detailed study was conducted to assess the psychosocial impacts of mastectomy for carcinoma breast on women.

In the minds of the patients, the diagnosis of cancer seems to be a sentence of death(54.9%) or at least a decrease in longevity and quality of life(35.7%). Besides the worry about disfigurement(78.4%), concern about heritability(47.1%) of the disease also worries most of the women with carcinoma of breast. Adverse effects of adjuvant therapy disturb 54.9% of the studied population. Decreased frequency of attending social functions(35.3%) and participation in the voluntary organizations(25.5%) were reported in the study. About 78% have reported that disease affected their sexual life, while 45.1% of the studied patients reported financial problems like loss of earnings and increased financial debt.

The recovery from and ailment is affected by care that goes beyond good medical and surgical intervention they have to be taken to a level of complete physical , mental and social wellbeing to have a good a quality of life. Assessment and referral to psychologic counseling is an important intervention a physician can do for this cause. More often, the patients keep their emotional feelings to themselves without expressing them even to family members, so physicians must take an active intervening role and ensure that the patient's needs in the psychosocial domains of health are met.

AB_24 PREVALENCE OF TYPE-II DIABETES MELLITUS IN A RURAL POPULATION OF NORTH KERALA

Deepa D Y[1] , Jayakumary M[2], Jayadevan S[3]
[1] -Student, [2] -Professor, [3] - Associate Professor , (Biostat) Dept. of Community Medicine, Academy of Medical Sciences, Kannur, Kerala, India

The massive rise in Type-II Diabetes Mellitus in recent years, the serious health risk and health care costs associated with the condition and fact that several risk factors for the disease are modifiable, have created great interest in whether diabetes can be prevented.

Diabetes Mellitus once thought to be uncommon in developing countries has now emerged as an important public health problem in Asia. In 2000, the prevalence of Diabetes Mellitus was estimated to be 0.19% in people below 20 years of age and 8.6% in those above 20 years. The combination of modern diet and sedentary life style has resulted in an increase in obesity and Type-II diabetes. The present study was conducted to assess the prevalence of type-2 diabetes in a rural population. A pre-tested structured questionnaire was used for data collection from the randomly selected two wards by doing a house to house survey. A total of 2161 individuals participated. The age group of studied population ranged from 20-79 years. The prevalence of diabetes was found to be high in the age group of 70-74 years. The overall prevalence of diabetes was found to be 66/1000. Among these patients 67.7% were on some medication and some were on diet control and physical exercise. The study concludes that diabetes is a prevailing hazard in the rural community, which hampers our socio economic development.

AB_25 PREVALENCE OF CHILDHOOD OBESITY AMONG SCHOOL CHILDREN

Mr. Pradeesh C B[1], Jayadevan S[2], Jayakumary M[3], Binoo D[4]
[1] -Student, [2] - Associate Professor, [3] - Professor, [4] - Lecturer (Biostat) Community Medicine, Academy of Medical Sciences, Kannur, Kerala, India

Childhood obesity is increasing worldwide and has an enormous concern in the field of obesity related diseases and child health. The present study was conducted to assess the prevalence of childhood obesity in school going children.

This was a cross sectional study conducted among school children. Two randomly selected schools in the Municipal area of Taliparamba in Kannur district of Kerala state were selected. 526 students between the age group of 5 to 13 years participated in the study. A pre-tested semi structured questionnaire was used to collect data from the study sample. The anthropometric measurements were taken for all students who participated in the study.

Among the 526 students participated, the age ranged form 5 - 13 years. Among these 48.7% were boys and 51.3% were girls. The Body Mass Index and Waist Hip ratio was calculated for all the participants. The prevalence of obesity based on BMI among boys was 5.1% and among girls it was 6.3%. The prevalence of central obesity was estimated to be 1% among boys and 55% among girls respectively in our study based on Waist Hip Ratio criterion. The increasing prevalence of obesity in school children is an indicator of an emerging health burden due to the increasing mortality and morbidity from NCDs in developing societies. School age is the apt age for applying primordial prevention strategies with regard to obesity. A concerted public health approach will be required for effective prevention.

AB_43 KNOWLEDGE AND PRACTICE REGARDING WASTE MANAGEMENT AMONG SCHOOL CHILDREN IN NORTH KERALA

Narayanan P.V, Usha Karunakaran
Academy of Medical Sciences, Kannur, Kerala, India

This cross sectional study was conducted to assess the knowledge, attitude and practice regarding solid and liquid waste management among school children in North Kerala. The study was conducted in two randomly selected schools in Kannur district of Kerala.

A total of 669 children studying from 7th to 12th classes were selected foer the study. A semi structured pre tested questionnaire was distributed as a pre test to students of two schools, one urban and one rural. 38.1% studied in an English medium school and 61.9% in a Malayalam medium school. 80% of the students knew that Dengue, 93.4% that Chikungunya, 63.7% that Malaria was spread by mosquitoes. 58.6% knew that dirty water collection, and 63% knew that broken pots and coconut shells were breeding places for mosquitoes. 81.6% thought that composting was the best method for degradable waste disposal. As a practice, 51.9% composted their degradable waste at home, 24.4% burnt it and 20.5% dumped it in the open. Though 84.9% of the students knew that recycling was the most appropriate method of disposal of non degradable wastes, 74% of them burnt plastic carry bags in their homes. 52.5% of the students thought that using liquid waste for growing plants was appropriate for liquid waste disposal.

With proper training at school there will be a carry home message and waste management can be done properly at the site of production itself thus leading to the control of vector borne diseases to a large extent.

AB_48 HIGH USE RATES OF TOBACCO AMONG ADOLESCENTS IN RURAL AREAS OF THE INDIAN STATE OF UTTARAKHAND: THE R

Pankaj Kumar Jain[1], V. Ramachandran[2], M. Murhekar[3], M.D.Gupte[4]
[1]- MAE-FETP Graduate, [2]- FETP Assistant Director, [3]- FETP Assistant Director, [4] - Director National Institute of Epidemiology, Chennai, India.

Background and Aim: About one fifth of the deaths attributed to tobacco worldwide occur in India, where it is illegal for minors under 18 years of age to purchase or use tobacco products. To guide tobacco control efforts, we conducted a community-based study to estimate the prevalence of tobacco use among adolescents in the Indian state of Uttarakhand.

Methods: We randomly selected 20 households in 30 clusters in the block of Gadarpur of the Udham Singh Nagar district. We interviewed adolescents between 13 and 15 years of age using semi-structured questionnaires between September and December 2005. We calculated prevalence and prevalence ratios using Epi-Info.

Results: We recruited 600 adolescents (Median age: 14 years, 27% of females). 179 subjects (30%, 95% confidence interval (CI) =26%-34%) reported having ever used tobacco (28%, 95% CI=21-35 and 27%; 95%CI=20-34 for smoking and smokeless form of tobacco use, respectively. Males were more likely to have ever used tobacco (prevalence ratio [PR]: 1.7, 95% CI= 1.2-2.3), 376 of the 595 adolescents (63%) from whom the information was available, had a father using tobacco. This was associated with a higher prevalence of current tobacco use (PR: 3, 95%; CI=2-4).

Conclusion: The high prevalence of tobacco use among adolescents is a cause of substantial concern. Legal restrictions on sale and use of tobacco products are ineffective. Innovative strategies involving parents and peers are needed to stop this developing epidemic.

AB_69 PREVALENCE AND FACTORS ASSOCIATED WITH ORAL ILL HEALTH IN A YOUNG SOUTH INDIAN POPULATION-A CROSS-SECTIONAL STUDY

Aneesh Thomas George
Department of Community Health, Christian Medical College

Background: This was a community based cross sectional study done in Vellore District of Tamil nadu state. The aim of this study was to determine the prevalence of oral health problems and assess the knowledge, attitude and practices regarding oral health among young adults (18-25 years) in urban slums and rural areas of Vellore district .

Methods: Multi stage cluster sampling method was used. The sample size was 440 individuals. A questionnaire was administered to the individual followed by clinical examination by qualified personnel. Various standard dental indices were used to for recording various clinical conditions (WHO,1987).

Results: The prevalence of dental caries was more in the urban slums and also more among the female population in the study. There was an association between mode of brushing and dental caries. An association was also picked up between tobacco use and severe periodontal conditions. There were more cases of fluorosis in the rural areas while tobacco use was high in the urban slums, in this young age group. There was no significant difference in the utilization of dental services between the two areas, however people in the urban slums seem to be more informed about oral health.

Conclusion: The two most prevalent oral diseases found were dental caries(68.6%) and severe periodontal conditions(65%) and they together contribute a major bulk of oral problems experienced in this age group. Information from this study should be utilized to design targeted intervention measures aimed at improving oral health status in this vulnerable age group.

AB_123 BIO-DENTAL WASTE MANAGEMENT: ISSUES,CONCERNS AND CHALLENGES

Joe Joseph[1], B.S.Nandakumar[2], Vidyaa Hari Iyer[3], Ajith Krishnan C.G[4]
[1]Associate Professor & Head, Dental Public Health, Rajasthan Dental College &Hospital, Jaipur, India. [2]Faculty,Community Medicine, MS Ramaiah Medical College, Bangalore,India. [3]Director,Smile Dental Clinic, Chennai,India. [4]Professor &Head,Dental Public Health,K.M.Shah Dental College & Hospital, Baroda,Gujarat.

Background: A dentists' workplace is arguably one among the most toxic occupational areas across the globe. A study shows that dentists carry a substantially higher level of mercury. It is ironic that health care settings which restore the health of the community are unwittingly also threatening their well being. The guidelines issued by the Dental Council of India is rarely given a thought. In essence the paper seeks to answer the following questions.

- What is the current scenario in bio-dental waste management practices followed in our country?
- How is it being practiced in developed countries and what are the areas for improvement?
- Finally to evolve practical and pragmatic guidelines.

Methods: This cross-sectional study was undertaken in the Union Territory of Pondicherry in 2003-04. A pretested semi-structured questionnaire was employed to collect data. Also key respondent interviews from relevant areas were undertaken from a representative population. An extensive review of available evidence based literature was also done to address the gaps.

Results: The scenario is grim with profound absence of an appropriate strategy. There is an urgent necessity to increase awareness regarding this vital issue. Waste management plans for bio-dental wastes have to be evolved and appropriate methods developed to operationalize the same.

Conclusion: A paradigm shift in the attitude towards this important concern is the need of the hour. Making simple changes in the way the wastes are disposed a dental health care setting, could be environmentally responsible. It is time to act to prevent an epidemic waiting to happen.

AB_185 EFFECT OF SMOKING ON BMI OF ADULTS IN DELHI: A POPULATION BASED STUDY

Pragti Chhabra[1], Sunil Kumar Chhabra[2]
[1]Community Medicine, University College of Medical Sciences, Delhi ,India [2]Cardiorespiratory physiology, Vallabhai Patel Chest Institute, Delhi, India

Background: Smoking may be associated with lower BMI. The present study was conducted to study effect of smoking on BMI.

Methods: A population based study was conducted in nine urban and four rural areas of Delhi. From each urban area a colony from lower, middle and upper category was selected. Adults from selected households were administered a questionnaire and weight and height measurements were made.

Results: Data on 3446 non smokers and 948 current smokers was analyzed. Majority (87.6%) of the smokers were males. The BMI values of 5th, 15th, 50th, 85th and 95th percentiles were higher for non smokers as compared to smokers. The proportion of underweight subjects (BMI 30) was 1.6% and 6.1% in smokers and non smokers respectively. The mean BMI was significantly higher in non smokers, females and subjects belonging to upper socioeconomic status. On multiple logistic regression analysis the adjusted odds ratio for being underweight was 1.34 (1.13-1.6) in smokers as compared to non smokers while the odds for overweight and obesity were 2.16 (1.24-3.78) in non smokers as compared to smokers. Other significant factors for underweight were male sex and lower economic status whereas for overweight and obesity they were female sex and higher income status

Conclusion: Smoking is independently associated with BMI besides sex and economic status of the subject.

AB_218 WORK STRESS: A CROSS-SECTIONAL STUDY AMONG SOFTWARE PROFESSIONALS IN KERALA, TECHNOPARK

Sheethal Joy
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum

Background: Stress at work place is a topic which is provoking interest in this modern era with increased use of technologic advancement .It has been identified that work stress negatively affects the work performance, leads to increasing absenteeism and poor quality of life. Work stress has been identified as a risk factor resulting in poor health outcomes .So there is an increased need to assess work stress in order to take prior actions for promoting work productivity and individual betterment. Information Technology industry is a major upcoming industry in India as well as Kerala with favorable government initiatives. There is paucity of data regarding work stress among software professional in Kerala and it was in such a background this study was proposed.

Objective: The main objective of the study is to understand the stressful work characteristics among the employees in software industry.

Methodology: A cross- sectional survey of 502 employees from Technopark, the major IT park in Kerala was undertaken. Work characteristics of the study population were assessed using a pretested self-administered questionnaire.

Results: Among the stressful work characteristics, 62 percent of the employees reported time pressure as one of the major work stressor. Only 14 percent of the employees reported a favourable work environment. 10.6 percent had interpersonal conflicts and 7.4 percent of the respondents had job insecurity.19.5 percent of the study population had work family imbalance with predisposition for females (25.4 percent) over males (16.4 percent).

Conclusion: There is considerable amount of work stressors among these young software professionals in Technopark Thiruvananthapuram, Kerala. So it's imperative that work place interventions are developed to tackle this situation before it results in disastrous outcomes.

AB_125 "DELAYING EFFECTS" OF WOMEN'S EDUCATION ON THEIR AGE AT MARRIAGE: EVIDENCE FROM NFHS II

Nandita Bhan, Rajat Mukherjee
PHFI, New Delhi

Research & policy on health and development issues have delved into education as a mechanism of eradicating health inequalities in society. The basis for encouraging education in health emerges from literature linking education to health through material, psychosocial and behavioural pathways (Ross 1995) and the 'capabilities' paradigm (Sen 1999). In India, education for women has been linked with issues of autonomy, decision-making and choice, which affects women's health and fertility, as well as family health. The empirical links between education and age at marriage & pregnancy for women have not been quantitatively examined.

Data from the National Family Health Surveys II (1998-99) from 33,026 women in reproductive ages at an all-India level has been used for time to (first) marriage and to first pregnancy, and analysed using Survival Analysis methods. Cox Proportional Hazards Regression and Accelerated Failure Time models were used to look at associations between education, and age at marriage and at first pregnancy. We estimated the 'delay factor' of education on age at marriage and at pregnancy, adjusted for caste/ethnicity, area of residence (urban/rural), standard of living and current age.

After controlling for area of residence, caste/ethnicity, current age and standard of living, significant delay factors were observed in age at marriage by education (adjusted AFT coefficients (eb) for delay factor for primary, secondary and higher education seen to be 1.0639, 1.1445 and 1.275 respectively; adjusted hazard ratios using Cox Regression for primary, secondary and higher education seen to be 0.679, 0.457 and 0.287 respectively; baseline for both methods is 'no education' group). Similar estimates of delaying effects were observed for age at first pregnancy.

AB_142 IMPACT OF A SPECIALLY DESIGNED INTERVENTION FOR PROMOTING DUAL PROTECTION BY CONDOMS AMONG THE NEWLY MARRIED WOMEN IN NORTH-EAST DELHI.

Samiksha Singh, Sanjay Chaturvedi, Amod Kumar, A.T. Kannan
Department of Community Medicine, University College of Medical Sciences, Dilshad Garden, Delhi

Introduction: To fight the dual burden of STI/ RTI and population growth, our main strategy stays condom promotion for dual protection. In India it is important to target newly married women. These young women are particularly susceptible to STIs because they are less aware of the contraceptive methods as is documented in various studies, especially reporting very less usage of condoms in particular.

Objective: To study the impact of a specially designed intervention on condom usage.

Methods: A community based intervention study was conducted in two resettlement colonies of North-east Delhi. Total 74 subjects in intervention group and 71 subjects in the control group were studied. Each subject was followed up for 9 months, three monthly or till the subject conceived, whichever was earlier.

The intervention: The intervention package included; a card with information in Hindi about sexual hygiene and contraceptive usage, and 5 packets of condoms. Health education regarding above was also provided using a flip chart.

Results: Only 2 and 8 subjects used condoms while 4 and 6 subjects used other contraceptive methods, any time during the study, in the intervention and control group respectively (using GEE analysis, $p<0.005$; adjustment for other variables, $p>0.005$). All 10 discontinued using condoms and 7 of them conceived in the course of follow up. 19(25.68%) women in intervention and 22(30.99%) in the control group reported RTI symptoms (using GEE analysis, $p<0.005$; t on adjustment $p>0.005$). Use of condoms had no significant impact on RTI incidence.

Conclusion: Condom usage is poor with no significant difference in the two study groups. Further studies with larger sample size need to be done to draw conclusive evidence.

AB_222 A REPORT ON INDICATIONS FOR ADMISSIONS TO INBORN NURSERY AND NEONATAL INTENSIVE CARE UNIT, SAT HOSPITAL, IN THE YEAR 2006

Syam N
Medical College Trivandrum

Background: Kerala is far ahead of the rest of India in all aspects of health and the Kerala Model of Health is acclaimed globally. Nevertheless, while the infant mortality rates of Kerala {10.8 per 1000} are comparable to those of developed nations, the neonatal mortality rates {10 per 1000} are almost three times of that in the United States of America {3 per 1000}. Hence, there is a need to focus on improving the quality of neonatal care, not just for improving the survival rates of babies but also for ensuring that these newborns have a better outcome. About 15,000 deliveries take place in the SAT hospital every year and, nearly 11 per cent of these babies end up in the critical care unit. The purpose of this study is to bring to focus the continuing high neonatal morbidity and mortality. The aim of the study was to find out the most common indications for admission to the Neonatal Intensive Care and the In-Born Nursery of SAT Hospital during the year 2006.

Objectives: To find the indications for admissions to Inborn Nursery and Neonatal Intensive Care Unit, SAT Hospital, Thiruvananthapuram in the year 2006.

Study design: Hospital Record based study [cross sectional]

Defining the cohort: Neonates who were admitted to Inborn Nursery and Neonatal Intensive Care Unit at SAT Hospital, Thiruvananthapuram during the year 2006 on whom relevant data is available from case records.

Sample size: 1835 neonates

Results :Neonatal data on 1835 sick newborns were analyzed. 25.3 % were premature newborns. 34.4% of total admissions were low birth-weight newborns and 11.5% were extremely low birth-weight (ELBW). The most common illness was respiratory distress, which accounted for 33.5% of cases. Sepsis was present in 26.92% of admissions, out of which 41% is Early Onset Sepsis (EOS). 26.43% cases were undergoing treatment for neonatal jaundice. 6.21% cases were hypoglycemic. 4.3% had congenital anomalies.

Conclusion: Low Birth Weight, contributed to 77.8% of all deaths in Inborn Nursery and Neonatal Intensive Care Unit in the year 2006. The causes of low birth weight are intimately related to various modifiable and non-modifiable factors, viz; maternal health, maternal nutrition, socio-economic status, maternal infections, inadequacy of proper antenatal care, inadequate birth spacing, etc.

Early Onset Sepsis is caused by organisms prevalent in the maternal genital tract or in the labour room and maternity operation theatre. Sepsis can be completely prevented by practicing aseptic precautions in various stages of labour as well during the neonatal period. Each institution should have an appropriate infection control policy and program. The results of the study stress the importance of perinatal and neonatal care, provisions to improve maternal nutrition in rural areas and infection control practices in hospitals.

AB_14 POVERTY AND HEALTH IN RURAL WEST BENGAL: CATASTROPHIC HOUSEHOLD EXPENDITURE FOR HEALTHCARE

Sumit Mazumdar[1], M. Guruswamy[2]
[1] - Research Scholar, [2] - Head, Dept of Development Studies, IIPS, Mumbai

Background: The aim of this paper is to quantify the extent of catastrophic household healthcare expenditure and consequent impoverishment and determine the factors responsible for it in rural areas of two districts in Northern West Bengal.

Methods: The data for the paper is based on 458 household interviews covering 2279 individuals, carried out in rural areas of two districts of northern West Bengal, Darjeeling and Uttar Dinajpur. Catastrophic expenditure and impoverishment due to health expenditure has been calculated as the proportion of non-food consumption expenditure of the households, with the thresholds of 20, 30 and 40 percent of the non-subsistence expenditure. Impoverishment is defined at the threshold, expenditure above which pushes the household below the poverty line. The determinants of household catastrophic expenditure were identified by multivariate logistic regression method.

Results: Even at modest levels of health care utilization and expenditure, 11-17 percent of households in the

study area incurred catastrophic health expenditure. Extent of catastrophic expenditure was higher among the poorest expenditure quintiles. Six percent of the households suffered impoverishment due to the catastrophic health expenditure. The key determinants of such catastrophe were: severity of the illness, type of provider consulted, economic status and community level effects of living in the particular community development block.

Conclusion: Findings suggest that financial burden of illness is severely on the poor, who incur significant catastrophic expenditure. The findings have important policy implications calling for risk-pooling and cost-sharing schemes to be initiated to cushion the adverse economic effects of illness among the poor.

AB_75 FUNCTIONALITY OF SUB HEALTH CENTRES IN THE MANDLA DISTRICT OF MADHYA PRADESH: A SITUATION ANALYSIS

Madhu Upadhyay
Department of Community medicine, University College of Medical Sciences, Delhi, India

Background: Subcentre is the first & nearest contact point between primary healthcare system and community. Despite their presence since 1974, health services delivered to the rural population is far from satisfactory. An in-depth analysis of overall functioning of subcentres was required to elicit the constraints limiting their performance.

Methods: A cross-sectional observational study was carried out in 40 randomly selected subcentres in Mandla district. Variables like facilities (structure, staff, equipments & supplies) available at subcentres, work performed by health workers & their knowledge was evaluated to assess functionality of subcentres. Scoring mechanism was developed to grade subcentres. Factors affecting functioning of subcentres were analysed.

Results: Only 27.5% of subcentres had government building and basic amenities like water and electricity were grossly inadequate. 47.5% of subcentres were graded as poorly equipped. 77.5% of subcentres were found adequately staffed.

Health workers spent their maximum time (1/3rd) in field visits followed by record keeping, attending meetings, immunization and clinic work. Nearly 15% of their time was spent in traveling.

Knowledge of 83% of health workers was good (Average knowledge score = 80.5%).

Performance of majority of subcentres was either good or satisfactory for MCH services but family planning and other health programs fared poorly at most centres.

Several factors like lack of building, its condition, area and population covered by subcentres, no promotion or incentive for good work were adversely affecting the performance.

Conclusion: Overall only 20% subcentres performed well whereas 68% of subcentres performed poorly. Differential attention was paid by health workers to various health programs.

AB_82 TECHNOLOGY ACCEPTANCE MODEL (TAM) TO ASCERTAIN THE AFFECTIVE FACTORS FOR OPERATIONALISING ELECTRONIC DATA RECORDS FOR PRIMARY HEALTH CARE IN RURAL INDIA

Chandil Gunashekara[1], Nandakumar Bidare[2], Gopinath D[3] , Vijay Singh[4]
[1] Medical Adminstration, Naryana Hrudayalaya, Bangalore,India [2] - Lecturer, Department of Community Medicine, MSRMC, Bangalore, India [3] - Professor, Dept of Community Medicine, MSRMC, Bangalore, India [4] - Adminstration, Naryana Hrudayalaya, Bangalore, India

Background: Rajiv Gandhi Arogya Yogana (RAY) is a private health initiative of Asia Heart Foundation in Ameti, Uttar Pradesh spread over 3800 sq.kms catering to a population of 2.4 million. The focus of the initiative is to provide accessible and affordable quality rural health care. The present study aimed to ascertain the affective factors for operationlizing electronic data records for effective delivery of primary health care.

Methodology: The study was undertaken to find the attitudinal factors at the providers end to adopt electronic data records for delivery of primary health care. The study was undertaken as a part of the monitoring and evaluation survey through use of pre-tested, semi-structured interview schedules, informal discussions and focus group discussions. The respondents comprised of 16 doctors working as consultants in the RAY clinics.

Results: From the preliminary analysis it was observed that all the doctors were willing to adopt ICT (Information Communication Technology) to initiate activities through electronic data records. A majority of them were aware of the advantages of the electronic data records and expressed positive willingness to under go specialized training, if required. About 50% of the respondents were aware of the potential problems as a consequence of technology adaptation. Despite this in many instances, the doctors themselves came out with practical and pragmatic solutions to face the initial shortcomings.

Conclusions: The doctors' perceived usefulness and ease of use of the proposed technology initiative was well evidenced. The user attitude and behavioral intention for adopting the proposed technology is favorable for the introduction of ICT for primary health care at the grass root level.

AB_104 ADVOCACY AND DEVELOPMENT OF PARTNERSHIPS TOWARDS A HEALTH PROMOTION POLICY FOR THE URBAN POOR IN BANGALORE CITY CORPORATION, BANGALORE, INDIA

Harikiran Arkalgud Govindaraju[1], P.R. Ramesh[2], Sreenivasan Velu[3], K S Nagesh[4]
[1]Dental Public Health, R V Dental College, Bangalore,India [2]Ex Mayor, Bangalore City Corporation [3]Ex Medical Officer, KSRTC [4]Principal, R V Dental College

This paper describes how a Capacity Building Leadership Program in health governance

was utilized by the Prolead II India team to work towards health system reform.

"PROLEAD II: A Health Governance Initiative" was a Modular Nine Month Capacity Building Program Of 'WHO Center For Health Development', Kobe,Japan and had 7 Teams each consisting of:1 Politician,1 member from Administration/bureaucracy and the 3rd member from Civil society/professional.

The Prolead II India team was selected for their role in the 'Bangalore Health City Initiative'.

Capacity building/training of the teams was in 3 modules[June 2005 to May 2006] in tools like TQM [total quality management], nodes of governance, customer value assessment, Ishikawa analysis, negotiation and an applied health promotion project.

Process: Development of Trisector Partnership Of the Principal Stake Holders of health promotion in Bangalore city: Bangalore Mahanagara Palika [BMP], CAMHADD [NGO], Rajiv Gandhi University Of Health Sciences etc

Results/outcome: November 2005: Document: "Process Towards Developing The BMP Health Promotion Policy: Strategic Directions" this document has been approved by the BMP and is scheduled to appear in the gazette.

2]March 2006: Bangalore selected as one of the WHO KOBE core project, 4 Field Research Centers

Conclusion: Establishment of the process towards a 'Health Promotion Policy' in BMP bridges the gap, of a framework to address the growing need for health promotion programs and the need to develop a 'Guided Policy', especially for the urban poor and also creates a NODE of influence in BMP for 'Advocacy And Partnerships'.

AB_110 IMPACT OF HEALTH EXPENDITURE ON HOUSEHOLD CONSUMPTION PATTERNS IN SOUTH INDIA

Dilip TR
Lecturer, Centre for Development Studies, Ulloor, Thiruvanathapuram, India

Objective: To determine the impact of incidence of health care expenditure in a household on overall consumer expenditure of the household

Methods: Secondary data from the NSSO's 61st round (2004-05) consumer expenditure survey for the four major south Indian states is analysed. First, the determinants of incidence of health care payments in a household are studied. Following that, consumption patterns of households incurring health expenditure is contrasted with those that not incurring the same, to study the impact of health expenditure on consumer expenditure levels in the population.

Results: Unlike other studies, the impact of medical (non institutional) expenditure; i.e. for outpatient services on the overall consumption expenditure is more than the impact of medical (institutional) expenditure; i.e. for inpatient care services. For poorer households this impact was mostly on their food consumption pattern. For the relatively well off households the

impact was more on clothing and consumption of non durable items. Further, the study suggests that the households which spend on tobacco and intoxicants were incurring more of health expenditure, than those households which do not spend on these items.

Conclusions: Out of pocket expenditure on outpatient care services is a serious issue, which needs more attention at the policy level.

AB_115 ROLE OF TELE-HEALTH IN REFORMING KERALA'S HEALTH SYSTEM : EXPLORING & EXTRAPOLATING FROM THE EXPERIENCES OF A NODAL OFFICER

M.K. Nabeel
Centre for Tele-health & Medical Informatics, Academy of Medical Sciences, Kannur, India

Academy of Medical Sciences (ACME) is one of the new generation medical colleges in the southern Indian state of Kerala. It has been chosen as one of the specialist nodal centre under the Kerala Government's Tele-Medicine project connecting various medical colleges with District Head Quarters in the first phase & later to be extended to the Primary Health Centres. The project christened as the Kerala Tele-Health & Medical Education Project, is partly funded by Indian Space Research Organisation (ISRO). An IP based system working on satellite technology, it has got its own advantages and disadvantages. This paper discusses the issues faced by this author and his fellow officers in implementing this project statewide.

A detailed account of the project from its planning stage to the implementation stage is narrated. Finally the paper will compare with other institutions with respect to effectiveness and shall highlight the best practices. This paper will mention briefly the utilization of the technology in this tertiary care teaching care hospital specifically stressing upon tele-education and tele-consultation separately. Also it narrates the challenges raised by the project and how we tried to overcome it especially in some areas where we did some value addition. Apart from confining to the activities under the State project, the author could get the support of the institution in setting up a Centre for Tele-Health & Medical Informatics with an aim to provide value added services.

Finally the paper draws a road map for taking this technology forward so that it can form an integral and enabling component of the comprehensive health system reforms to be undertaken in Kerala.

AB_119 KNOWLEDGE, ATTITUDES AND PRACTICE OF HEALTHCARE ETHICS AND LAW AMONG DENTAL GRADUATES AT THE R.V. DENTAL COLLEGE CAMPUS, BANGALORE

Kirankumar Dhanappa, A.G. Harikiran
Dental Public Health, R V Dental College , Bangalore,India

Background - In spite of tremendous advances in healthcare resulting in the prolongation of life and the cure or amelioration of previously incurable conditions, many communities express dissatisfaction about the care they receive. Dissatisfaction is reflected in expressions about poor ethical conduct within the healthcare sector and an increasing use of litigation against healthcare practitioners. Hippocratic Oath, codes of conduct and laws regulating the profession are devised and updated from time to time. This may be a reflection of both an increased public awareness as well as the inappropriate practices by the healthcare professionals. It is therefore important to find out from Dental graduates their knowledge, attitudes and practice about Dental ethics and law.

Aim -The aim of the study is to assess the knowledge, attitudes and practices among dental graduates in relation to healthcare ethics and law.

Methods: A 15 item self-administered questionnaire about healthcare ethics and law was devised, tested and distributed to 200 participants of R.V. Dental College. The questionnaire included a full range of response options, designed to identify the Knowledge, Attitudes and Practice of study participants towards patient care in relation to healthcare ethics and law. The data from the completed questionnaires were entered into an SPSS database and analyzed.

Results: The collected data has been analysed to understand the dental graduates attitudes, knowledge and practice.

Conclusion: This study attempts to assist dental practitioners in guiding their professional conduct and also aids in curriculum development.

AB-144 THE IMPACT OF GOVERNANCE ON HEALTH OUTCOMES IN INDIA

Indrani Saran, Krishna Dipankar Rao
Health Economics, Public Health Foundation India, New Delhi, India

Governance is emerging as an important issue in health system performance. Corruption is one aspect of governance that is strongly correlated with a variety of health indicators in cross-country studies. However, this relationship has yet to be empirically demonstrated in India's case. Since the public health sector plays an important role in the provision of preventative and curative healthcare, especially for the poor, there is a clear impetus for examining the relationship between corruption in this sector and key health outcomes.

This study examines general trends in the relationship between health indicators such as infant mortality, maternal mortality and immunization rates, and household perceptions of the levels of corruption in twenty states in India. Data on levels of perceived corruption was obtained from a Transparency International study on corruption in public services conducted in 2005. The study uses exploratory data analysis techniques and correlations to determine the strength of the association between key health outcomes and perceived corruption across states of India.

Perceived corruption is significantly associated with high infant mortality and negatively associated with immunization rates with correlations ranging between 0.4 and 0.7. These results hold across both urban and rural areas. Similarly, perceptions of high levels of corruption are positively correlated with higher maternal mortality.

The results indicate that there is a strong relationship between levels of corruption in the health sector and key health outcomes. This has important implications for India's efforts in improving health outcomes, particularly for the poor, and in achieving the Millenium Development Goals.

AB_152 THE UTILIZATION OF HEALTHCARE SERVICES IN INDIA: WHAT DETERMINES THE CHOICE OF THE HEALTH CARE PROVIDER

Soumitra Ghosh
International Institute for Population Sciences, Mumbai

This paper examines the determinants of utilization of curative health services, paying particular attention to the role of education and income. The analysis is based on the 52nd (1995-96) and 60th round (2004) data of National Sample Survey Organisation.

The untreated morbidity rates have considerably increased among men and women both in rural and urban areas. In 2004, while the hospitalisation rate amongst the poor was 16 per thousand population, it was 28 per thousand amongst the non-poor. Both public and private hospitalizations increase with income but rate of growth is higher in the private sector.

The paper provides an analytical framework for analyzing both the binary decision to seek formal health care in the event of illness, and the multinomial choice of health care provider. The results show that income is not an important determinant of health care choices in India in case of outpatient care. It however plays a significant role in choosing the healthcare provider for inpatient treatment.

AB_177 PUBLIC PRIVATE PARTNER-SHIPS: AN EMERGING ISSUE IN HEALTH SYSTEMS REFORMS

Prabal V. Singh
Indian Institute of Management, Ahmedabad, India

The issue of Public Private Partnership in health was raised in the World Health Assembly in 1993 where the role of private and non government sector in implementing health programmes was discussed at length. India currently spends 5.2% of its GDP on health of which the public sector health expenditure is less than 1 % of the GDP. The out of pocket expenditure in India stands at 76 % of the total health care expenditure.

In this paper six PPP initiatives taken by Government of Punjab, Rajasthan, Delhi, Gujarat, Ahmedabad Municipal Corporation and Ministry of Health and Family Welfare Government of India (MNGO) are examined qualitatively and relatively.

These initiatives have been classified under demand side PPP and supply side PPP. Both demand and supply side PPP have been evaluated against a framework of Equity, Accessibility, Efficiency and Quality, which is followed by their evaluation against five critical factors of regulating policy interventions which are Finance, Payment, Organization, Regulation and Behavior. In both the frameworks, demand side PPP is found to be more equitable and efficient, whereas the supply side PPP is more accessible. It is very difficult to differentiate both the PPP's on the quality parameter. Except for the Gujarat initiative and to some extent Ahmedabad Municipal Corporation initiative none of the initiative seemed to have delivered the desired, few have also been non starters. The paper concludes by proposing an institutional framework for central as well as state level management of Public Private Partnerships.

AB_199 PATTERN OF MORBIDITY PREVALENCE AND HEALTH CARE UTILIZATION AMONG ELDERLY: A COMPARATIVE STUDY OF MAHARASHRA AND UTTAR PRADESH

Gopal Agrawal, P. Arokiasamy
International institute for population sciences, Deonar, Mumbai

With the rapid advancement of demographic transition, it is expected that India will face the challenge of dealing with problem of population ageing in the coming two or three decades. The health risks among elderly especially on account of communicable diseases tend to rise with population ageing. In this context, this study assesses the pattern of disease burden, health care utilization and its covariates in two selected states: Maharashtra, the state ahead in demographic transition and Uttar Pradesh, the state lagging in this process based on national sample survey 60th round data.

Evidence suggests that the prevalence of non-communicable diseases is higher in Maharashtra compared to Uttar Pradesh. Results from multinomial logistic regression models show that both the prevalence of morbidity and health care utilization is increasing among elderly persons. However substantial disparities exists in health care utilization between Maharashtra and Uttar Pradesh by gender, place of residences, age, education, social groups, marital status, economic independence, monthly per capita expenditure, religion, living arrangement, number of son living and number of daughter living.

AB_187 HOW MANY HEALTH WORKERS, WHO ARE THEY AND WHERE ARE THEY ? - USING MULTIPLE SOURCES OF INFORMATION TO ESTIMATE THE HEALTH WORKFORCE IN INDIA.

Krishna D. Rao[1], Aarushi Bhatnagar[1], Shomikho Raha[2], Puja Thakker[1] Indrani Saran[1]
[1]Public Health Foundation of India [2]World Bank

Background: Health workers are critical for delivering health care and studies indicate that population health and service utilization is associated with the size, composition and distribution of the health workforce. Information about the health workforce is important for planning and addressing labor market failures which result in the geographic and compositional mal-distribution of health workers. In India, information on the health workforce is typically inaccurate, fragmented and unreliable.

This study has the following two objectives. First, to estimate the size, composition and distribution of the health workforce across states in India using the census and household surveys, compare these with official statistics and produce a set of 'best estimates'. Secondly, to evaluate the accuracy, advantages and disadvantages of these different data sources.

Data: The study uses data from the 2001 census, 2004/05 NSSO, Ministry of Health and Family Welfare, and from medical and nursing councils. Health workforce estimates from the different sources are triangulated.

Results and implications: Preliminary results indicate substantial differences between official workforce estimates and those from the census and household survey. There is better agreement between the latter two sources. Moreover, the health workforce density in India is below the international norm of 2.5 per 1000 population, though there is considerable inter-state variation. Further, doctors, female doctors, and nurses are concentrated in urban areas. Workforce information from the census and household surveys could be biased due to recording of self-reported occupations, ambiguous occupation descriptions, and inconsistent classification. Overall, this study shows that routinely available data sources can provide useful information on the health workforce.

AB_211 GLOBAL & REGIONAL MIGRATION OF INDIAN HEALTH WORKFORCE

Anu S Nair
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum, India

Introduction: Global interaction including trade, migration, rather than insulated isolation; has been the basis of economic progress in the world. The opulence of globalised world has come only to some, but not to many. In India globalization has fashioned two crucial predicaments that need de rigueur attention. The flow of highly skilled and technically qualified youth with immense vivacity to foreign nations is tumbling our indigenous research and development processes. Secondly, the rapid urbanization due to the migration from the rural areas is becoming a multi faceted issue with social, economic, health dimensions.

Objective: The main thrust of the paper is to analyze the determinants and impacts of the migration induced by globalisation with a special emphasis on the health sector.

Methodology: The study will bring out a good review of existing literature including earlier published research studies, the reports of international organizations like World Bank, WHO, UNO, ILO etc. and Economic Surveys of Union and state governments and reports of ministries like Health, Labour and HRD, apart from the documents of Planning Commission and State Planning Boards.

Conclusions: Preliminary findings of the study indicate that the lucrative salaries and other perks along with the high quality of life is driving the professionals to migrate from India. This is causing a grave deficit of highly trained manpower in various sectors particularly in the health care and other scientific research and development areas. A major portion of results is yet to be analysed. Detailed analysis will be presented in the conference.

AB_215 AWARENESS OF SERVICES RENDERED BY PHC AND ITS PERCEIVED QUALITY: A STUDY IN KAZHAKOOTAM BLOCK IN KERALA STATE

Manjusha Warrier
Rajah Charitable Medical Trust, Thrissur, India

Background: India's health status is remarkable for its myriad contradictions. The state of Kerala remains top in terms of health indicators in India and is comparable to many developed nations. PHCs are the crucial institutions in the health sector, which helped the state to achieve its remarkable milestones, but at present they are facing serious challenges due to many reasons.

Objectives: The study is aimed to know the awareness of the people regarding services provided by primary health centers and its perceived quality and to analyze the factors that impede them from availing the services of PHC.

Methodology: A descriptive primary study was conducted among 60 respondents using an Interview schedule in six grama panchayaths in Kazhakkootam block of Thiruvananthapuram district. Samples are selected using Purposive random sampling. Three point Rating scales were used. Statistical techniques like Measures of association to test relationship between the variables and Chi- Square test to test the hypothesis were used to analyze the data.

Conclusions: Study reveals many deplorable findings. Nearly half of the respondents perceived the quality of services of PHCs to be poor. In spite of how respondents perceived the quality of service of PHC, majority of them approach private hospitals for their health care needs. Nearly 65% respondents feel that their awareness about the epidemics and vector borne diseases are unsatisfactory. Detailed and final analysis of the results will be presented in the conference.

AB_216 DIFFERENTIAL PATTERNS IN UTILIZATION AND COST OF HEALTH SERVICES IN INDIA: AN INTERSTATE ANALYSIS

Arun.Bahuleyan
Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum

Rationale: The health system in India has considerably improved during the past five decades with the spread and accessibility of modern medicine and considerable improvements in conventional indicators of health status. Despite an extensive public health system, the major part of health care in India is in the private sector. Households incur very high out of pocket expenditure for financing health care and household consumer expenditure surveys (NSSO) suggest that households spend about 5%-6% of their total consumption expenditure on health and nearly 11% of all non-food consumption expenditure on health care.

Methodology: The data for this paper was obtained from nationally representative household survey on morbidity, health care utilization and expenditures by National Sample Survey Organization (NSSO). The paper used three rounds of NSSO survey data for the time periods of 1986-87 (42nd round), 1995-96 (52nd round) and 2004 (60th round) to analyze the changing patterns of utilization of health care services and cost of treatment.

Results: There has been a considerable increase in the utilization of non-government health facilities for the treatment of non-hospitalized ailments in rural (78.0%) and urban (81.0%) areas. Utilization of government facilities for inpatient care declined from 60.0% in 1986-87 to 40% in 2004. Utilization of government facilities increased in Orissa, Himachal Pradesh, Karnataka, and West Bengal while it declined in Bihar, Haryana, Kerala, Maharashtra and Tamil Nadu. Utilization trend shows that there has been considerable decline in the utilization of government facilities and a consequent increase in the household out-of-pocket spending.

Author Index

A

Aarti Kelkar Khambete 77
Aarushi Bhatnagar 106, 109
Abhay Bang 33
Agarwal S 79
Ajay Rajan 120
Ajayan K 75, 89
Ajith Krishnan C.G 126
Akshya Mishra 104
Akthar Hussain 51
Aleyamma Mathew 85
Alastair Fischer 103
Amarjit Singh 35
Amar Shah 58
Amit Jindal 94
Amit Malviya 51
Amod Kumar 128
Anagha Pradhan 62
Anant Bhan 98
Anas 50
Aneesh T George 126
Anil Chandran 71
Anilkumar T 94
Anish T.S. 48, 49, 61, 101, 120
Anitha V 106
Anjali Arun 55
Anjana Nayek 95
Anoop A 86
Antonisamy B. 118
Antony Lawrence K A 86
Anu S Nair 111, 135
Anuja U 49
Anuradha Tripathi 82
Aparajita Dasgupta 123
Arokiasany 134
Arthur L Reingold 73, 121
Arun A 78
Arun Bahuleyan 136
Arun Bamne 58, 60
Arun Basil Mathew 75, 89
Arun Kumar Sharma 94, 116
Arun R 83, 96
Arup Chakrabartty 95
Aseem Sharma 54
Asha George 107, 109
Ashis Das 48, 59, 64, 108, 113
Ashok Kumar 72
Asirvatham Edwin Sam 57
Asit Biswas 63
Aslam Nayyer 73
Asma Rahim 116
Asok Kumar 104
Asokan R.V. 122
Avinash Sadashivaiah 54
Aysha Beegum 84

B

Babu Mathew 87
Bali S. 91
Banhisikha Bhattacharya 95
Barua A. 50
Beela Sarah Mathew 85
Bhalchandra Kinikar 57
Bharati Sharma 110
Bheemeshappa Somappa Sajjan 89
Bhuiyan S.A. 112
Bibin Paul 119
Bijlani R.L. 93
Biju Soman 71, 99
Bindhu Vasudevan 116
Binoo D 124
Bobby Abraham 56
Brahma A. 64
Brian Gilligan 56

C

Chakrabartty Arupkumar 118
Chakraborty Suman 118
Chandil Gunasekhara 130
Chaturvedi S 82
Chitra Karat 55, 73, 78, 121
Civy Pulayath 84

D

Deepa D.Y. 124
Deepa Sankar 84
Dileep V. Mavalankar 103, 110
Dileepkumar T 49
Dilip T.R 131
Dinesh M 86
Dipankar Maji 64
Divya Bhagianadh 110
Dorairaj Prabhakaran 82
Dwivedi S. 91

E

Ekbal B 44
Ekramul Hoque M. 92

F

Farhana Sultana 62
Farook Umarul M. 49
Faruque Ahmed 62

G

Gajalakshmi V 85
Gangadharan Kadangot 81
Gangadharan P. 84, 85
Gigi Thomas 87
Girija Mohan 50
Gita Sen 42
Godwin S K 101
Gopal Agarwal, 134
Gopinath D 130
Gordon Nyabade 53
Grover V L 82
Gupta P.C 40
Gupte M D 45, 51, 59, 60, 63, 65, 66, 67, 112, 125
Guruswamy M. 129

H

Habib Hasan 51
Harikiran Arkalgud G. 131, 133
Harry A Lando 39, 80
Hassan M. A. 91
Hema R 102
Hemachandran K. 122
Hiremath.S.G 119

I

Ilias Mahmud 75
Indrani Saran 133
Indu P V 95
Indu P. Satyadas 94

J

Jacob Kuruvilla 86
Jagdish Chataut 89
Jai Pal Singh 53
Jairaj Thanekar 60
Jaisy Mathai 112
Janakiram C. 79
Jayadevan S 124
Jayakrishnan R 88
Jayakrishnan T 90
Jayakumary M 124
Jayalekshmi P 88
Jayan Jacob Mathew 86
Jeeja M C 90
Jeesha C Haran 119
Jeffrey D. Klausner 55, 73, 121
Jessil Abraham 119
Joe Joseph 126
Joe Varghese 111
John Porter 52, 62
Johnson C. A. 112
Joson Meloot J. 54

K

Kabir Shiekh 52
Kalavathy Mathurchennath 84
Kalavathy Elango 84
Kalpana Kumari 53
Kannan A.T. 116, 128
Kapoor J.P. 72
Karina Kielman 52
Karl Krupp 55, 73, 78, 121
Kesavachandran C. 100, 123

Kidangazhiyathmana Ajithkumar 56
Kirankumar Dhanappa 132
Kishor Hargoli 58
Kishor Khilare 62
Krishna Dipankar Rao 109, 134, 135
Krishnakumar R 92
Kutty VR 43, 83, 96, 102

L

Lakshmy R 79
Lal S.S. 122
Leela Ittyamma K R 94
Leowski J. 37
Lekshmi Ramakrishnan 82
Lekshmy S P 50
Lincoln Choudury 104

M

Madan Mohan Pradhan 48, 59, 64
Madhu Unnikrishnan 79
Madhu Upadhyay 130
Madhuri Mankar 62
Mahanta T.G. 50
Maharajan Muthu 54
Maitraye Basu 76
Manasi Kumar 97
Mangalore Shashidhar Kotian 89
Manish Ranjan 108
Manju A.S 86
Manjunath B C 79
Manjunatha R 99
Manjusha Warrier 135
Manu Raj 92
Mark Nichter 41, 61, 80
Mary Paul 92
Mathews Mathai 118
Mathur N 100, 123
Md. Akramul Islam 62
Meena Daivadanam 77, 93
Meenakshi Bhattacharya 55
Megha Bharath 87
Mini G.K. 90
Minni Khetarpal 58, 60
Mohammed Shafi 87
Moni A. Kuriakose 84
Mrunal Shetye 56, 57
Mudita Upadhaya 110
Muraleedharan V.R. 42
Muhammed Jasim 87
Muhammed.J.Nishad 87
Mukherjee Devlina 118
Murhekar M.V. 45, 67, 125
Mushtaque Chowdhury 75

N

Nabeel M K 132
Nabil Ahmed 75
Nagesh K S 131
Nandakumar A. 85
Nandakumar B.S 126
Nandakumar Bidare 130
Nandita Bhan 128
Nunui Lalnuntlangi 80
Narayanan P.R. 34
Narayanan P V 125
Narinder Saini 76
Navaneetham K 103
Naveen Gupta 67
Naveen K H 91
Nayek Anjana 118
Neelam Verma 53
Neelu Singh 103, 121
Neethu Sukumar 83
Nijas Ahammed 83
Niju M L 124
Nisha R.S 117

P

Padmanabhan P 37
Padmanabhan T.K 86
Palinisamy Subramanian 72
Pankaj Kumar Jain 125
Pankajvinayak Sharma 56
Panna Lal 53
Panniyammakal Jeemon 79
Paolo Boffetta 85
Parvathy Sankararaman 110

Pasricha R. 108
Passi S.J. 65, 93
Paul Brennan 85
Paul Russel 94
Paula H Palmer 112
Phitaya C. 112
Prabal V Singh 103, 133
Pradeepkumar A. S. 61, 80, 81
Pradeesh CB 124
Pragti Chhabra 127
Prasanna Samuel 70, 118
Prasanth Subrahmanian 97
Prashant Deshpande 56
Prasun Das 63
Pratibha Singh 69, 117
Puja Thakker 135
Purnima Madhivanan 55, 73, 78, 121
Purushothaman A.V. 124

R

Radha M S 86
Rahul Sharma` 82, 116
Rajan B. 85, 88
Rajat Mukherjee 128
Rajesh Kumar 99
Raju Damodaran 95
Rama Bhunia 66
Ramachandran V. 67, 125
Ramadas Kunnumbath 87
Ramkrishnan R 51, 59, 60, 63, 65, 66
Ramdas Pisharody 94
Ramesh Bhat 103
Ramesh K 48, 49
Ramesh P.R. 131
Ramila Bisht 105
Ramya 56
Ranadeb Biswas 123
Ranganath B.G. 119
Raveendran M A 56
Ravi Narayan 44
Ravikar Ralph 70
Ravindran T.K.S 36, 59, 72, 96
Raymond De Vries 98
Reddy K S 38, 79, 82
Reghu Ram Nair 88
Regi Jose 119
Rekha Ravindran 102
Reshmi Ramachandran 101
Reynold Washington 56
Rony Thomas Rajan 107
Roy Narayana Das 111
Ruby G 79

S

Sabina Rashid 75
Sabu K.M. 96
Sailesh Mohan 80
Saji Saraswathy 48, 108
Sajith J S 89
Saju Joseph 52
Sameer Pawar 62
Samiksha Singh 128
Samrat Basu 95
Samson Tse 92
Sanjay Chaturvedi 128
Sanjiv Bhasin 76
Sankara Sarma.P 88, 97, 114
Sankaranarayanan Rengaswamy 87
Sanu Sain 61
Sanyal H 65
Saritha K R 61
Saritha L 61
Sarkar S. 64
Saxena P C 91
Sebastian Ousepparampil 104
Sen T. K 59, 64, 66
Shahaduz Zaman 62
Shailaja Tetali 72, 100
Shajahan Rabu Mole 61
Shamim Ahmed 102
Sharma Puran K 59, 60
Sharma S. 64
Sharmistha Mitra 63
Sheela Rangan 52
Sheethal Joy 110,127
Sherry Peter 84
Shibu Vijayan 120
Shilpa Karvande 52
Shrihari J.S. 118
Shiny C Alex 91

Shomikho Raha 109
Shyamali Rudra 51, 63, 65
Simy Mathew 114
Singh Nahar 91
Singh S. N. 65
Sivan Y.S 113
Sivasankaran S. 93
Sobhana Ranjan 65, 93
Soman C R 75, 89
Somayajulu UV 71
Sonali Meena 76, 94
Soumitra Ghosh 133
Soumya Deb 123
Sowmini C V 98
Sreekala K.N. 48, 101
Sreekumar.C 88
Sreelatha P.R. 50, 117
Sreenivasan Velu 131
Sriram Venkataraman 83
Subha Nanoo 95
Sudharmini S 49
Sudhir Bunga 104
Sugam Bhatnagar 55
Sujatha Rao 34
Sukumar 104
Suman Chakraborty 95
Sumit Mazumdar 129
Sumit Shrimali 105
Sundaram K R 84, 92
Sundaramoorthy L 67
Sunil A. Salim 101
Sunil Kumar Chhabra 127
Surender Nikhil Gupta 67
Suresh Badhan 53
Swathi Patil 52
Syam N 129

T

Tapas Kumar Ray 67
Tej Ram Jat 122
Thankappan K.R. 40, 58, 61, 80, 81 82, 93, 99, 112
Thara Somanathan 87
Thiagarajan Sundararaman 108
Thomas Bina 116
Thresia C.U. 61, 80
Tilak Mukherji 71
Tony Lawrence 120

U

Udaya S Mishra 103, 106
Usha Kandaswamy 112
Usha Karunakaran 125
Usha Rani 53

V

Vamadevan S Ajay 82
Varalakshmi Chandrasekaran 55, 73, 78, 121
Varghese Mani 86
Venugopal K. 117
Vidula Purohit 52
Vidyaa Hari Iyer 126
Vijay Singh 130
Vijayakumar G 83
Vijayakumar K 35, 75, 89, 117
Vikram Patel 39
Vinita Datye 62
Vinoda Bavdekar 56
Vipin Bihari 100, 123
Vishal Sharma 94
Vivek C 79

W

William Joe 103, 106

Y

Yelavarrthi R. Padma 70
Yvan Hutin 51, 59, 60, 63, 65, 66

CONFERENCE PARTICIPANTS

PANELISTS, MODERATORS AND CHAIRPERSONS

Sl. No	Name	Address	Contact Details
1	A. Sreenivas	WHO-RNTCP ConsultantState T.B. Cell Red Cross RoadTrivandrum 695 032	Ph: 0471-24466058 sreenivasa@tbcindia.org
2	Abhay Bang	Director, SEARCH, Gadchiroli Maharashtra – 442 605	Ph : 07138-255407 Fax 07138-255411 search@satyam.net.in
3	Amar Jesani	Coordinator, Centre for Studies in Ethics and Rights(An Institute of Anusandhan Trust), 4th Floor, 26 St. John Baptist Road, Bandra West, Mumbai 400 050	Phone: 022-26406703, Fax: 022-26518518 amar.jesani@gmail.com
4	Amarjeet Sinha	Joint Secretary, National Rural Health Mission, 242-A Nirman Bhawan, Maulana Azad Marg, New Delhi- 110 011	Telefax:011-23062157 amarjeet.sinha@nic.in
5	Amarjit Singh	Principal Secretary (Family Welfare) & Commissioner , Commissionerate of Health Medical Services, Medical Education and Research, Block No 5, Dr Jivraj Mehta Bhavan Gandhinagar – 382010	Phone: 079-23253271 Fax: 079-23256430 cohealth@gujarat.gov.in
6	Anil C Mathew	Associate Professor of Biostatistics PSG Institute of Medical Sciences and Research Coimbatore 641 004	Ph : 09245287851 dranilmathew@rediffmail.com
7	Asha Raghavan	State Service Medical Officer, NCHP Unit State TB Cell, Directorate of Health Services Thiruvananthapuram	Ph: 0474-2767418/ 2791299 (R) asha.raghavan@gmail.com
8	Ayesha Beegom.A	Deputy Director, Care and SupportKerala State AIDS Control SocietyRed Cross Road Trivandrum-35 (Res) TC 7/171 Kumaranasan NagarMedical College PO Ulloor, Trivandrum-11	ayshabeegom@gmail.com, aysha@vdotron.com
9	C S. Pandav	Professor and HeadCentre for Community Medicine All India Institute of Medical Sciences Ansari Nagar, New Delhi – 110 029	Ph : 011-26589470, 26593553 Telefax: 011-26588522 Cell: 09810038423 cpandav@iqplusin.org

10	C.A.K. Yesudian	Dean (R&D), Tata Institute of Social Sciences, Deonar, Mumbai - 400 088	Ph : 022-25563289-96, Fax 022-25562912 yesudian@tiss.edu
11	C.C. Kartha	Head, Cellular & Molecular Cardiology SCTIMST, Trivandrum 695 011	Ph :0471-2524608 cckartha@sctimst.ac.in
12	Cherian Varghese	Cluster Focal Point, Non communicable diseases and mental health, WHO India office 553-35 A wing, Nirman Bhavan, Maulana Azad Road, New Delhi – 110 011	Ph:011- 23061955 Fax:011- 23062450 varghesec@searo.who.int
13	Dinesh Arora	Mission Director, National Rural Health Mission, Government of Kerala, Trivandrum	Tel:0471-2518008 0471-2327865 Fax: 0471-2301181 dineshias@gmail.com
14	M. Prasannakumar	Assistant Director, AIDS CellNear General HospitalThiruvanthapuram 695 0350471	aowr@searo.who.int
15	Girish Menon	Associate Professor, Neurosurgery Department, SCTIMST, Trivandrum 695 011	Ph: 9447039569 gmn@sctimst.ac.in
16	Gita Sen	Indian Institute of Management Bangalore Bannerghatta Road, Bangalore – 560 076	Ph : 080-26582450 Fax: 080-26584050 gita@iimb.ernet.in
17	Harry Lando	Division of Epidemiology,School of Public Health, University of Minnesota, Suite 300 1300 S. 2nd Street, Minneapolis MN 55454-1015,United States of America	Ph : 001-612-624-1818 Fax: 001-612-624-0315 lando001@umn.edu
18	Jacob John	Former Professor CMC Vellore 439 Civil Supplies Godown Lane Kamalakshipuram Vellore Tamil Nadu – 632 002	Ph : 0416-2267364 Fax: 0416-22622684 vlr_tjjohn@sancharnet.in, tjacobjohn@yahoo.co.in
19	Jayakumary M	Professor, Department of Community Medicine, Academy of Medical Sciences Kannur	
20	Jayaprakash M.	Professor,Department of Community Health Christian Medical College,Vellore – 632 002 Tamil Nadu	Ph : 0416-2284207 Fax: 2262268 princi@cmcvellore.ac.in
21	Jeesha C Haran	Professor, Department of Community Medicine , Medical College, Karakkonam Trivandrum 695 504	jeeshach@yahoo.com

22	Jerzy Leowski	Regional Advisor NCDWHO Regional Office, South East Asia Region, World Health House, Indraprastha Estate, Mahatma Gandhi Marg, New Delhi – 110 002	Ph : 011-23370804 Fax: 011-23705714 leowskij@whosea.org
23	Joy Elamon	Chief Programme Coordinator SDC-CapDecK, SBI Buildings, Pattom Trivandrum 695004	Ph : 9447368992 0471-2543392(O) 2543391 (fax) capdeck@asianetindia.com joyelamon@hotmail.com khsrc@sancharnet.in
24	K S Shaji	Associate Professor, Department of Community Medicine, Sri Devaraj Urs Medical College, Tamaka, Kolar	
25	K Sujatha Rao	Additional Secretary & Director General, National AIDS Control Organization, Ministry of Health & Family Welfare, 9th Floor, Chandralok Building, 36, Janpath, New Delhi – 110 001	Ph: 011-23325331 Fax: 011-23731746 asdg@nacoindia.org
26	K Vijayakumar	Professor, Department of Community Medicine, Government Medical College Thiruvananthapuram	Mob : 9447563000 communitymedicine@gmail.com
27	K. Hemachandran	Medical Consultant (RNTCP-PPM), World Health Organization-Kerala and Andhra Pradesh, State T.B. Cell, Red Cross Road, Trivandrum 695 032	Mob: 9846324005 hchandran@gmail.com
28	K. Navaneetham	Professor, Centre for Development Studies Prasanth Nagar, Ulloor Trivandrum – 695011	Mob:9895262148 Fax:2447137 nava@cds.ac.in
29	K. Srinath Reddy	President Public Health Foundation of India PHD House, Second Floor, 4.2, Sirifort Institutional AreaAugust Kranti Marg New Delhi	Ph: 011-46046000 Fax: 011-41648513 ksrinath.reddy@phfi.org
30	K.A. Kumar	Sr. Consultant Psychiatry Behavior Medicine, TC 13/598, Near Ulloor Bridge Trivandrum 695 004	Ph: 0471-2440833, 2445533 drkakumar@rediffmail.com
31	K.V.Sreenivasan	Director, SOMA, A-6 Kowdiar Gardens Trivandrum 695 003	Tel: 0471 – 2435993 mail2kvs@gmail.com

32	KR Thankappan	Professor and HeadAchutha Menon Centre for Health Science StudiesSree Chitra Tirunal Institute for Medical Sciences and TechnologyTrivandrum – 695 011	Ph : 2524231, Fax 2446433 thank@sctimst.ac.in kavumpurathu@yahoo.com
33	M. Krishnan Nair	Founder Director, Regional Cancer Centre Director & Consultant Clinical Oncologist SUT Institute of Oncology, P.B. No: 1052 Pattom, Thiruvananthapuram-695 004	Ph : 0471 – 2446220 Fax 2444304 mknairtvm@yahoo.com
34	M.A. Oommen	Institute of Social SciencesTC 3/2678, KRA – 98 Surya Nagar, Pattom P.O. Trivandrum 695 004	Telefax:2534763 maoommen@asianetindia.com
35	M.D. Gupte	Director National Institute of Epidemiology (ICMR), Plot No. R – 127, 3rd Avenue, Tamil Nadu House Board, Phase I and II, Ayapakkam, Chennai- 600 077	Ph : 044-26357469 Fax: 044-26357464 nieicmr@vsnl.com/ mohangupted@yahoo.com
36	Manju R Darwin	Sr. Lecturer, Department of Community Dentistry, PMS College of Dental Sciences & Research, Vattapara,Trivandrum 695 028	Ph : 9846158489 Fax:0472-2587874 manjurenjit@rediffmail.com
37	Mark Nichter	Department of Anthropology,Emil Haury Building, University of Arizona, P.O. Box 210030 1009E.South Campus Drive, Tucson AZ 85721-0030,United States of America	Ph : 001-520-626-9067 Fax: 001-520-621-2088 mnichter@u.arizona.edu
38	N. Devadasan	Institute of Public HealthNo:12/28, 32nd Cross, Jayanagar 7th Block, Bangalore 560 082	Tel: 080 – 26645232 Fax: 26596466 deva@devadasan.com
39	N. Krishnaji	National Fellow, ICSSR (affiliated to Centre for economic and social studies Hyderabad) 105 Godavari Apartments, Kundanbagh Begumpet, Hyderabad 500016	Ph : 040-2340 1743 Fax (CESS): 040-2340 2789 n.krishnaji@gmail.com
40	Nirmala Sudhakaran	Associate Prof. Obstetrics & Gynaecology, S.A.T Hospital, Medical College Campus Tvm 695 011	Ph: 0471-2528418 (o) 2347886, 2341222 nirmalac@hotmail.com
41	P Padmanabhan	Director of Public Health and Preventive Medicine Government of Tamil Nadu, 359 Anna Salai,Chennai 600 006	Ph :044 24335075 Fax:044-24323942 dphpm@rediffmail.com
42	Paula H. Palmer	Assistant Professor, Director Global Development, Director, MPH Global Health Track , Institute for Health Promotion and Disease Prevention Research & Transdisciplinary Tobacco Use Research Center, Keck School of Medicine, Department of Preventive Medicine University of Southern California	1000 S. Fremont Avenue, Unit 8, Alhambra, CA 91803 Ph : 626-457-4027 Fax: 626-457-4044 ppalmer@usc.edu

43	PC Gupta	Director, Healis Sekhsaria Institute of Public Health, 601 B Great Eastern Chambers, Plot No 28, Sector 11, CBD Belapur, Navi Mumbai – 400 614	Ph : 022-2757 5487 Fax: 022-2757 1786 pcgupta@healis.org
44	Peter Berman	Lead Economist, Health, Nutrition, Population (HNP), The World Bank, 70 Lodi Estate, New Delhi – 110 003	Ph : 011-24619491 Fax: 011-2461-9393 pberman@worldbank.org
45	Poonam Muttreja	Director, MacArthur Foundation India, India Habitat Centre, Zone VA, First Floor, Lodhi Road, New Delhi 110 003	Ph: 011-24644006 24611324 Fax: 011-24644007 pmuttreja@macfound.org
46	P R Narayanan	Director, Tuberculosis Research Centre, Mayor V.R. Ramanathan Road,Chetpet, Chennai 600 031	Ph : 044-28362432, prnarayanan@trcchennai.in
47	Rajeev Sadanandan	Commissioner, Land RevenuePublic Office Vellayambalam, Trivandrum 695 010	rsadanandan@gmail.com
48	Rajesh Bhatia	Regional Advisor, Blood Safety and Clinical Technology, WHO-Regional Office for SE Asia World Health House, Indraprastha Estate Mahatma Gandhi Marg, New Delhi 110 002	Tel: 011 23370804 Fax 011 -23370197 bhatiaraj@searo.who.int
49	Rama Baru	Centre for Social Medicine, Jawaharlal Nehru University, New Mehrauli Road, New Delhi 110 067	Telefax: 011-26704420 ramabaru@mail.jnu.ac.in
50	Raman Kutty	Professor Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum – 695 011	Ph : 2524240 Fax: 2446433 rkutty@gmail.com
51	Ravi Duggal	Consultant-Research Training, Advocacy, 501 B Chaithanya Apartments, Clarke Town Kabadi Chowk, Nagpur 440 004	rduggal57@gmail.com
52	Ravi Narayan	Community Health Advisor, Community Health Cell, No: 359 Jakkasandra 1st Main 1st Block Koramangala, Bangalore – 560034	Ph : 080-41280009 25531518 Fax: 080- 25525372 ravi@phmovement.org, chcravi@gmail.com
65	Aarushi Bhatnagar	Public Health Foundation of India New Delhi, India	Ph (W) : 91-11-46046000 Ph (H) : 919871952271 aarushi.bhatnagar@phfi.org
66	A S Pradeepkumar	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum	Ph (W) : 91 - 471 - 2524247 aspk@sctimst.ac.in

67	Aarti Kelkar Khambete	AMCHSS, SCTIMST, Trivandrum	Ph (W) : 0471 2524437 Ph (H) : 0471 2345301 Fax : 0471 2553469
68	Abdul Jalal V.	Valiyakath House Kaidakkal, Talikulam, Thrissur 680569 India	Ph: 04872394276 abduljalal@yahoo.com
69	Alastair Fischer	NICE (National Institute for Clinical Excellence), London UK	Ph (W):44(0)20 7067 5889 Ph (H):44(0)20 7834 5788 Fax:44 (0)20 7061 9789 alastair.fischer@nice.org.uk
70	Aleyamma Mathew	Regional Cancer Centre, Trivandrum, India	Ph (W) : 91-471-252 2249 Ph (H) : 91-471-2444558 Fax : 91-471-2550782 amathew@rcctvm.org
71	Amar Shah	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	Ph (W) : +91-0471-2443152 dr.amar.mph@gmail.com
72	Amritha Geevarghese	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
73	Anagha Pradhan	The Centre for Health Research And Development, The Maharashtra Association Of Anthropological Sciences, Pune Maharashtra	P (W) : +91-20-25884150 maaschrd@vsnl.net
74	Aneesh T	George Department of Community Health, Christian Medical College (CMC),Vellore, Tamil Nadu,	Ph (W) : 0416-3074207 Ph (H) : 09894765662 dr.aneeshgeo@gmail.com
75	Anil Chandran	TNS, New Delhi, India	Ph (W) : 011 39878706 Ph (H) : 011 32656169 Fax : 011 4256 6677 anilchandrans@gmail.com
76	Anish T.S	Department of Community Medicine, Medical College, Thiruvananthapuram, Kerala, India	Ph (W) : 0471-2528379 Ph (H) : 09946039211 doctrinets@gmail.com
77	Anitha V	Lecturer,S.N.College, Sivagiri, Varkala.	Ph (W) : 04702602362 Ph (H) : 9446361223 anitha_sujathan@yahoo.co.in

78	Ann Hayashi	Institute for Health Promotion and Disease Prevention Research & Transdisciplinary Tobacco Use Research Center, Keck School of Medicine, University of Southern California 1000 S. Fremont Avenue, Unit 8, Alhambra, CA 91803E	Ph: 626-457-4027 Fax: 626-457-4044 ahayashi@usc.edu
79	Antony Lawrence K A	Oncology Department ,AIMS, Kochi, India	Ph (W) : 0484 2801234 Ph (H) : 0484 2231795 Fax : 04842802020 mdinesh@aims.amrita.edu
80	Anu S Nair	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	Ph (W) : 91-471-2524251 Ph (H) : 91-0-9447154502 anu@sctimst.ac.in
81	Arun Bamne	Municipal Corporation of Greater Mumbai, Public Health Department, Mumbai, India	Ph (W) : 091+022+24901168 Ph (H) : 091+022+28679715 Fax : 091+022+24901167 mdtcs@hathway.com
82	Arun Kumar Sharma	Department of Community Medicine, University College of Medical Sciences, Delhi, India	Ph (W) : +91 -11- 22582971 Ph (H) : +91 -120- 4128924 Fax : +91 11 22590495 arsharma62@gmail.com
83	Arun Kumar Sharma	Department of Community Medicine, University College of Medical Sciennces, Delhi, India	Ph (W) : +91 -11- 22582971 Ph (H) : +91 -120- 4128924 Fax : +91 11 22590495 arsharma62@gmail.com
84	Arun R	Insurance Medical Services, ESI Hospital, Ezhukone,Kollam, India,	Ph (W) : +91-474-2522454 Ph (H) : +91-93499 17089 arunrdr@gmail.com
85	Arup Chakrabartty	Health Vision and Research, Kolkata, West Bengal	Ph (W) : 03324431980 arupdr@gmail.com
86	Aseem Sharma	Population Services International (PSI), 7/16 Nehru Enclave, Kalkaji Extension, New Delhi -110 019	Ph (W) : 91-11-41629370 Ph (H) : 91-11-26477077 Fax : 91-11-41629373
86	Aseem Sharma	Population Services International (PSI), 7/16 Nehru Enclave, Kalkaji Extension, New Delhi -110 019	Ph (W) : 91-11-41629370 Ph (H) : 91-11-26477077 Fax : 91-11-41629373
87	Asha George	Indepedent Researcher, Kochi, Kerala	Ph (W) : 91-484-266 4838 ashasara@gmail.com

88	Ashis Das	Public Health Resource Network, Bhubaneswar, Orissa	Ph (W) : 91-674-6531770 ashismph@yahoo.com
89	Ashis Das	Public Health Resource Network, Bhubaneswar, Orissa	Ph (W) : 91-674-6531770 ashismph@yahoo.com
90	Aslam Nayyer	India-Naz Foundation International, Lucknow, UP	Ph (W) : 0522-2205782/2 Ph(H) : 0522-6451644 Fax : 0522-2205783 aslam@nfi.net
91	Asma Rahim	Department of Community Medicine, Medical College, Calicut, Kerala, India	Ph (W): 0495-2356531 Ph (H) : 0495-3297272 rahim.asma@gmail.com
92	Avinash Sadashivaiah	Population Services International (PSI), 7/16 Nehru Enclave, Kalkaji Extension, New Delhi -110 019	Ph (W) : 91-11-41629370 Ph (H) : 91-11-26477077 Fax : 91-11-41629373 avinash@psi.org.in
93	Beena Varghese	21 Royal Meridian Layout, Begur Road Bangalore 560068 India	Ph: 9449811781 beena.varghese@phfi.org
94	Bency Joseph	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
95	Bhalchandra Kinikar	Niramaya Arogya Dham, Solapur, Maharashtra	Ph (W) : 0217 - 2316061 Ph (H) : 0217 - 2374840 Fax : 0217 - 2316061
96	Biju Soman	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	Ph (W) : 2524230 Ph (H) : 25522199
97	C K Jagadeesan	State Research Officer,ORT, Directorate of Health Services, Kerala	
98	C. Anderson Johnson	Professor, Institute for Health Promotion and Disease Prevention Research & ransdisciplinary Tobacco Use Research Center, Keck School of Medicine, University of Southern California 1000 S. Fremont Avenue, Unit 8, Alhambra, CA 91803	Ph:626-457-4027 Fax: 626-457-4044
99	C. Janakiram	Department of Community Dentistry, Amrita School of Dentistry, Cochin, India	Ph (W) : 0484 2801234 Ph (H) : 0484 6539326 sekarcandra@gmail.com

100	C.Kesavachandran	Epidemiology,Industrial Toxicology Research Centre,PB No.80,Lucknow 226001	Ph (W) : +91-9450094053 Ph (H) : +91-9450094053 kesavachandran@rediffmail.com
101	Chandil Gunasekhara	Medical Administration,Naryana Hrudayalaya, Bangalore,India	Ph (W) : 091-080-7835000-18 Ph (H) : 091-80-26684728 Fax : 080-7832648 drchandil@hotmail.com
102	Chiranjeev Bhattacharjya	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, rivandrum - 695 011	
103	Chitra Grace A	Department of Humanities & Social Sciences,Indian Institute of Technology (Madras)Chennai 600036 India	Ph: +919444131031 chitragrace@yahoo.co.uk
104	Deepa D.Y.	Student, Department of Community Medicine, Academy of Medical Sciences, Kannur, Kerala, India	Ph (W) : 04972808899 Ejk170470@hotmail.com
105	Deepak K G	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
106	Deepti Joy	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
107	Dilip T.R	Lecturer, Centre for Development Studies, Ulloor, Thiruvanathapuram, India,	Ph (W) : 91-471-2448881 Ph (H) : 91-471-2442740 Fax : 91-471-2447137 dilip@cds.ac.in
108	Dipankar Maji	MAE-FETP Scholar, National Institute of Epidemiology, Ayapakkam, Chennai, India	Ph (W): 09836046212 Ph (H) : 033-25647891 Fax : 044-26357464 (N.I.E.) maji.dipankar@rediffmail.com
109	Dipankar Maji	MAE-FETP Scholar, National Institute of Epidemiology, Ayapakkam, Chennai, India	Ph (W): 09836046212 Ph (H) : 033-25647891 Fax : 044-26357464 (N.I.E.) maji.dipankar@rediffmail.com
110-128	Diploma in Public Health Students 2008	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	Ph: (917) 209-7866 dbasusen@hsph.harvard.edu

130	Diya Basu-Sen	376 Riverway # 11, Boston, MA 02115, US,	
131	Elizabeth Mathews	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
132	Farook Umarul	Department of Community Medicine, Medical College, Thiruvananthapuram, India	Ph: 0471-2528379 Ph (H) : 0471-2618393 commedtvm@gmail.com
133	Gangadharan Kadangot	Department of Applied Economics, Kannur University, Thalassery, Kerala,	Ph (W):0490-2347385 Ph(H):0460-2206930 dr_k_gangadharan@yahoo.co.in
134	Gangadharan P	Oncology-Cancer Registry, Amrita Institute Of Medical Sciences, Kochi,India	Ph (W) : +91 0484-2801234 EXTN. 8306 Ph (H) : +91 0484 - 2204031 Fax : 2802020 gangadharanp@aims.amrita.edu
135	Gayatri Giri	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
136	Gigi Thomas	Community Oncology Division, Regional Cancer Centre, Trivandrum,	Ph (W) : 0471-2522299 Ph (H) : 0471-2530267 Fax : 04712447454 drgigi@rediffmail.com
137	Glorian Sorensen	44 Binney St. City: Boston, MA 02115 US	Ph: 1-617-632-2183 Fax: 1-617-632-1999 glorian_sorensen@dfci.harvard.edu
138	Gordon Nyabade	Go Fishnet Youth Project, Kisumu, Kenya	Ph (W) : +254-710660102 gonyabade@yahoo.com
139	Hafis Shahul Hameed Abdul	Neo Villa, Beach post, Trivandrum 695 007 India	Ph: 04712500381 Email:s.a.hafiz@gmail.com
140	Harikiran Arkalgud G.	Dental Public Health,R V Dental College , Bangalore,India	Ph (W) : +91-80-22445754 Ph (H) : +91-80-23321838 Fax : +91-80-26658411 docharikiran@gmail.com 9886329121
141	Indrani Saran	Health Economics, Public Health Foundation India, New Delhi, India	Ph (W) : 91-11-46046000 Ph (H) : 91-11-24624211 indrani.saran@phfi.org

142	Indrani Sharma	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for' Medical Sciences and Technology, Trivandrum - 695 011	
143	Indu P V	Department Of Psychiatry, Medical College, Thiruvananthapuram,	Ph (W) : 0471-2528454 P (H): 0471-2474537 dr.indu.pv@gmail.com
144	Indu P. Satyadas	Department of Community Medicine, Medical College, Thiruvananthapuram, Kerala, India	Ph (W) : 9495980886 Ph (H) : 0471 2550200 aniltvindups@yahoo.com
145	Iype Joseph	Consultant (Training), State Surveillance Unit, IDSP, Directorate of Health Services, Kerala	
146	J. Joson Meloot	Population Services International (PSI) 6/80 Luz avenue, Mylapore, Chennai -600004, Tamilnadu	Ph (W) : +91 44 24996131 Ph (H) : +91 44 26622562 Fax : +91 44 24995808 joson@psi.org.in
147	J. Radha	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
148	Jacob Kuruvilla	Mar Baselios Dental College , Kothamangalam, Ernakulam	Ph (W) : 0485 2828745 Ph (H) : 0481 2430435 dr_jacob@rediffmail.com
149	Jagadish Chataut	Community Medicine, Kasturba Medical College, Mangalore, India,	Ph (W) : 0091-0824-2422271 ext 5560 jagdishchataut@hotmail.com
150	Jagan Kumar. B	MPH Student,2008 Batch Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
151	Jayakrishnan R	Community Oncology Division, Regional Cancer Centre, Trivandrum, Kerala	Ph (W) : 471-2522299 Ph (H) : 0471-2303840 Fax : 0471-2447454 jayrish71@yahoo.com
152	Jayakrishnan T	Department Of Community Medicine. Medical College, Kozhikode, India.	Ph (W) : 91-9447953005 Ph (H) : 91-9446229017 jayanjeeja@yahoo.co.in

153	Jayalekshmi P	Natural Background Radiation Cancer Registry, Karunagappally, Kerala	Ph (W) : +91 0476 2685203 nbrrkply@gmail.com
154	Jayant Panda	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
155	Jessy Tomy	WHO Fellow-FTP Trainee	
156	Joe Joseph	Associate Professor&Head, Dental Public Health,Rajasthan Dental College &Hospital,Jaipur,India	Ph (W) : 91-141-3213180 jisjoe@yahoo.com
157	Joe Varghese	Ph D Scholar, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	Ph (W) : 91-471-2524251 Ph (H) : 91-9946357237 vakkan2000@yahoo.com
158	K P Pradeep Kumar	State Programme Manager, RCH (NRHM), Directorate of Health Services, Kerala	
159	K Sandeep	Consultant - Monitoring and Evaluation, NRHM, Directorate of Health Services,Kerala	
160	K. Sreenivasan	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	Ph: 2524243 Fax: 2446433 ksrini@sctimst.ac.in
161	Kalavathy Mathurchennath	Regional Cancer Centre, Thiruvananthapuram, India	Ph (W) : 91 471 2522224 Ph (H) : 91 471 2383080 Fax : 914712447424 kalavathy@rcctvm.org 9846080519
162	Kalavathy Elango	Head and Neck Institute, AIMS, Kochi, India	Ph (W) : 91-484-2801234 Ph (H) : 91-484-2800504 Fax : 0484-2802082 elango@aims.amrita.edu
163	Karl Krupp	#A8 Raviudaya Apartments, Jayalakshmipuram 1st Cross, Mysore 570012 India	Ph: 0821-446644 Fax: 0821-2565607 karl_krupp@hotmail.com
164	Kidangazhiyathmana Ajithkumar	Medical College Chest Hospital,	Ph (W) : 91- 487-2200310 Ph (Ho) : 91- 487-2333322 ajisudha@gmail.com

165	Kovid Sharma	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
166	Krishna D Rao	Public Health Foundation of India, New Delhi	Ph (W) : (011)46046041 Ph (H) : 9818954463 kd.rao@phfi.org
167	Krishna D Rao	Public Health Foundation of India, New Delhi	Ph (W) : (011)46046041 Ph (H) : 9818954463 krao@jhsph.edu
168	Lekshmy S P	Assam Medical College & Hospital, Dibrugarh, Assam	Ph: 09435473978 Ph (H) :09435473978 lekshmysp@yahoo.co.in
169	Lincoln Choudury	Catholic Health Association of India, Secunderabad, India	Ph (W): 919849943030 lincolnchoudhury@gmail.com
170	Lizy Mathew	'Maria Glow', IMA Road, Anayara P.O Trivandrum 695029 India	Ph: 984-7162109 lizybijy@hotmail.com
171	M K Nabeel	Alliance for Social Health Action (ASHA), Centre for Tele-health & Medical Informatics, Academy of Medical Sciences, Kannur, India	Ph (W) : 0091-9447386581 Ph (H) : 0091-497-2732470 drnabeelmk@yahoo.com
172	M. Ekramul Hoque	Centre for Asian Health Research & Evaluation, School of Population Health, University of Auckland, New Zealand	Ph (W) : 0064 9 3737599 Ph (H) : 0064 9 6209970 Fax : 0064 9 3035932 ekramul.hoque@gmail.com
173	Madan Mohan Pradhan	Department of Health & Family Welfare, Govt. of Orissa, Bhubaneswar, Orissa	Ph (W) : 91-674-2554810 drmmpradhan@sify.com
174	Madhu Upadhyay	Department of Community medicine, University College of Medical Sciences, Delhi, India,	Ph (W) : 91-11-22582972 Ph (H) : 91-9871423042 mu3071@gmail.com
175	Madhu. U	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
176	Mahesh Mahalingam Khalipe	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	

177	Mala Ramanathan	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology Trivandrum - 695 011	Ph: 2524234 Fax: 2446433 Email:mala@sctimst.ac.in
178	Manasi Kumar	Department of Psychology, University College London, London, UK	Ph (W) : ++00-44-02076798276 m.kumar@ucl.ac.uk
179	Manish Ranjan	Franchise Department, Population Services International, New Delhi, India	Ph (W) : 011-41629370 Ph(H) : 09313663811 Fax : 011-41629373 mranjan@psi.org.in
180	Manish Ranjan	Franchise Department, Population Services International, New Delhi, India	Ph (W) : 011-41629370 Ph (H) : 09313663811 Fax : 011-41629373 ragini@psi.org.in
181	Manju R Nair	Achutha Menon Centre for Health Science tudies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	Ph: 2524235 Fax: 2446433 manjun@sctimst.ac.in
182	Manjunatha R	Achutha Menon Centre For Health Science Studies, SCTIMST, Medical College.P.O, Trivandrum	Ph (W) : +91-0471-2443152 manju.mph@gmail.com
183	Manu Raj	Pediatric Cardiology AIMS, Kochi, India	Ph (W) : 0484 4001855 Phone (Home) : 94472 20172 Fax : 0484 2802051 manuraj@aims.amrita.edu
184	Meena Daivadanam	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology Trivandrum - 695 011	Ph (W) : +91-471-2524437 Ph (H) : +91-471-2419364 meenaray@hotmail.com
185	Megha Bharath	Government Medical College, Trivandrum	Ph (W) : 00919847334781
186	Mini G.K.	Achutha Menon Centre For Health Science Studies, SCTIMST, Medical College.P.O, Trivandrum	Ph (W) : 0471-2524252 Ph (H) : 09495376825 minisureshkumar@yahoo.com
187	Mini P. Mani	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	

188	Minni Khetarpal	Municipal Corporation of Greater Mumbai, Public Health Department, Mumbai , India	Ph (W) : 091+022+24135569 Ph (H) : 091+022+26145811 Fax : 091+022+24901167 mkhetarpal@gmail.com
189	Mitesh Kumar Bhanderi	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
190	Mohammad Akthar Hussain	Department of Medicine, IMS, BHU, Varanasi, Uttar Pradesh	Ph (W) : 09415396998, drakhtarhussain@gmail.com
191	Mohammed Asheel	MPH Student,2008 Batch Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
192	Mohammed Shafi	Government Medical College, Trivandrum	Ph (W) : 00919847334781
193	Mrunal Shetye	Deputy Project Director Health Services, KHPT-Corridors, Pune India,	Ph (W): +91 20 40053451 Ph (H): +91 20 26852122 mrunal@corridors.in cell. 09850907890
194	Mudita Upadyay	CMHS, Indian Institute of Managment, Ahmedabad, Ahmedabad, India,	Ph (W) : 91-79-26324696 Ph (H) : 91-79-27660739 Fax : 91-79-26324698 mudita@iimahd.ernet.in
195	Muhammed Jasim	Government Medical College , Trivandrum	Ph (W) : 00919847334781 muhammed.jasim@gmail.com
196	Muhammed.J Nishadh	Government Medical College, Trivandrum	Ph (W) : 00919847334781
197	Nadiya Ummer	Tutor, Department of Microbiology, Amrita Institute of Medical Sciences, Amrita School of Medicine, Edapally, Cochin	Ph:9895229445 medimicrobiology@amrita.edu
198	Nandita Bhan	Public Health Foundation of India, New Delhi, India	Ph (W) : 91-11-46046000 Ph (H) : 91-11-26852551 nandita.bhan@phfi.org
199	Naomi Odell	19 Roberts Street, Unit 3, City: Brookline, MA 02445,	Ph: 1-507-358-3341 nodell@hsph.harvard.edu
200	Narayanan PV	Academy of Medical Sciences, Kannur, Kerala,, India	Ph (W) : 9447993753 nanumbbs@rediffmail.com

201	Naveen K H	Department of Community Medicine, Motilal Nehru Medical College, Allahabad, U.P, India	Ph (W) : 09935619300 Ph (H) : 09935619300 naveenkhdr@gmail.com
202	Neelu Singh	Research Associate, Indian Institute of Management, Ahmedabad, India,	Ph (W) : +91-79-2632 4728 Ph (H) : +91-79-40054815 neelus@iimahd.ernet.in
203	Neethu Sukumar	Department of Community Medicine , Govt Medical College, Trivandrum	Ph (W) : 9895286651 P (H) : 91-0484-2319627 sriramvram@gmail.com
204	Nijas Ahammed	Department of Community Medicine, Govt Medical College, Trivandrum	Ph (W) : 9895286651 Ph (H) : 91-0484-2319627 sriramvram@gmail.com
205	Niju M L	Final Year Medical Student, Pariyaram Medical College, Kannur, Kerala,	Ph (W) : 9447282772 Ph (H) : +91-472-2872332 drnijuml@gmail.com
206	Nunui Lalnuntlangi	Raigarh Ambikapur Health Association, Ambikapur, Chattisgarh	Ph (W) : 09300028600 Ph (H) : 09436142860 nunui_0303@yahoo.co.uk
207	Orija Oluseyi	No 6 Edmond Cresent Yaba Lagos Pmb 2013 YabaLagos, Lagos 23401, India	Ph: 2348034422440 orijajo@yahoo.co.uk
208	P. Sankara Sarma	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	Phone: 2524232 Fax: 2446433E sarma@sctimst.ac.in
209	P.R. Sreelatha	Department of Medical Education, Medical College Hospital, Alappuzha, Kerala	0477-2282367 Ph (H) : 0477-2262224 Fax : 0477-2262224 kalladavenu@bsnl.in
210	Palinisamy Subramanian	Research, Rural Women's Social Education Centre- Ruwsec, Chengalpattu, Tamil Nadu, India	91-44-27420216 Ph (H) : 91-44- 27420357 Fax : 91-44-27420216 rural@md4.vsnl.net.in
211	Pankaj Kumar Jain	MAE-FETP Graduate, National Institute of Epidemiology, Chennai, India	Ph (W) : 91135-2721792 Ph (H) : 919412969502 Fax : 91135-2721792 drpankajwelcomeyou@ gmail.com
212	Panniyammakal Jeemon	All India Institute of Medical Sciences, New Delhi,	Ph (W) : +91 11 26850117 jeemon@ccdcindia.org

213	Paresh Vamanrao Dave	10, Anar Bunglow, K.K. Nagar Char Rasta, Ghatlodia, Ahmedabad 380061 India	Ph: 9376176580 Fax: 079-23253559 pvdave1@rediffmail.com
214	Parvathy Sankararaman	CMHS, Indian Institute of Managment, Ahmedabad, Ahmedabad, India,	Ph (W) : 91-79-26324696 Ph (H) : 91-79-27660739 91-79-26324698 parvathy@iimahd.ernet.in
215	Prabal V Singh	Indian Institute of Management, Ahmedabad	Ph (W) : +91-9427330717 Ph (H) : +917926324728 prabalvsingh@yahoo.co.in
216	Prabal V Singh	Indian Institute of Management, Ahmedabad, India	Ph (W) : +91-9427330717 prabalvsingh@rediffmail.com
217	Pradeesh CB	Student, Community Medicine, Academy of Medical Sciences, Kannur, Kerala, India	Ph (W) : 9946209994 jayajayadevan@rediffmail.com
218	Pragti Chhabra	Department of Community Medicine, University College of Medical Sciences, Delhi ,India,	Ph (W) : 9112258297 Ph (H) : 91124615514 pragschhabra@yahoo.co.in
219	Pramod Singh G.C	School of Public Health, B.P.Koirala Institute of Health Sciences, Dharan: 00977, India,	Ph: 977-25-525555 Ext. 2622 (O), 3209 ® Fax: 977-25-520251 gharti_pr@yahoo.com
220	Prasanna Samuel	Department of Community Health, Christian Medical College, Vellore, India	Ph (W) : 91-416-2284205 prasanna_samuel@ hotmail.com
221	Prasanna Samuel	Department of Biostatistics, Christian Medical College, Vellore - 632 002	Ph (W) : 91-416-2284205 prasanna_samuel@ hotmail.com
222	Prasanth Subrahmanian	NHSRC, Thrissur, Kerala,	Ph (W) : 011-26162948 Ph (H) :0480-2732010 Fax:011-26163005 prasanth.mph@gmail.com
223	Prasun Das	National Institute of Epidemiology, Ayapakkam, Chennai, India,	Ph (W) : +91-44-2635 7156 Ph (H) : +91-9434130398 Fax : +91-44-2635 7464 drprasundas@yahoo.co.uk
224	Pratap Kumar Jena	Bhaunria, Sukleswar, Cuttack, 754286, India	Ph: 919387715983 drpratapjena@gmail.com

225	Pratibha Singh	Department of community Outreach, Baptist Christian Hospital, Tezpur, Assam	Ph (W) : 09935563746 Ph (H) : 09935563746 pratibhaes@gmail.com
226	Pratibha Singh	Department of community outreach, Baptist Christian Hospital, Tezpur, Assam	Ph (W) : 09935563746 Ph (H) : 09935563746 pratibhaes@gmail.com
227	Purnima Madhivanan	School of Public Health, University of California, Berkeley, USA,	Ph (W) : +1 510 295 9286 pmadhivanan@hotmail.com
228	Rajeev Arun Ekka	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
229	Rajesh Kumar	AMCHSS, SCTIMST, Trivandrum, Kerala, India	Ph (W) : +91-9893656598 Ph (H) : +91-9893656598 drrajjesh@yahoo.com
230	Rajesh K	Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
231	Ramesh K	Department of Community Medicine, Medical College, Thiruvananthapuram, Kerala, India	0471-2528379 Ph (H): 09846559753 rameshpsm@gmail.com
232	Ranganath B.G	Associate Professor, Department of Community Medicine, Sri Devaraj Urs Medical College, Tamaka, Kolar	Ph (W) : 08152-210573 Ph (H) : 080-9986116628 Fax : 08152-243008 ranganath_bg@ rediffmail.com
233	Reshmi Ramachandran	Department of Community Medicine, Medical College, Thiruvananthapuram, Kerala, India	Ph (W) : 0471-2528379, reshmirhiju@gmail.com
234	Riddhi Prakash Doshi	B-6, Kamal apartments, Azad road, vile parle-east, Mumbai 400057 India	Ph : +919969606813 dr.riddhiprakash@gmail.com
235	Rini Raveendran	PG Student, JJM medical college, Davengere, Karnataka	
236	S S Rani	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	

237	Sabrina Khan	170 Brookline Ave., Unit 622 Boston 02215	Ph: +1 303 359 9317 skhan@hsph.harvard.edu
238	Sabu K.M.	Health Information Management, MCOAHS, Manipal Unviersity, Manipal, India,	Ph (W) : 0820-2922707 Ph (H) : 09845421534 sabu.km@manipal.edu
239	Saji Saraswathy	Public Health Resource Network, Bhubaneswar, Orissa	Ph (W) : 91-674-6531770 sajisaraswathy@yahoo.com
240	Saju Joseph	Maharashtra Association of Anthropological Sciences, Centre for Health Research and Development, Pune, Maharashtra	Ph (W) : +91-20-25884150 saju_333@yahoo.com
241	Samiksha Singh	Department of Community Medicine, University College of Medical Sciences, Delhi, India,	Ph (W) : 91-11-22582971 Ph (H) : 91-9811811290 drsamikshasingh@gmail.com
242	Sanjay. S. Das	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
243	Sanjeev Kumar	Centre for Community Medicine, Old OT Block, Ansari Nagar, AIIMS, New Delhi-110029 India	Ph: 09999440578 sanjivaiims@rediffmail.com
244	Sathiya Jaya Chande	12/28, 32, cross, 7th Block, Jayanagar, Bangalore 560 082 India	Ph: 080- 26645232 Fax: mail@iphindia.org
245	Shailaja Tetali	Student, Karolinska Institute, Sweden	Ph (W) : 0471-3015501 Ph (H) : 0471-2726573 shailaja_c@yahoo.com
246	Sharma Puran K	National Institute of Epidemiology (ICMR), Ayappakkam, Chennai	Ph (W) : 91-44-26357156 Fax : 91-44-26357464 indiafetp@gmail.com
247	Sharma Puran K	National Institute of Epidemiology (ICMR)Chennai,	Ph (W) : 91-44-26357156 Fax : 91-44-26357464 indiafetp@gmail.com
248	Sharmistha Mitra	National Institute of Epidemiology, Ayapakkam, Chennai, India	Ph (W) : +91-044-65651587 Ph (H) : +91-033-24054204 Fax : +91-44-26357469 ilovedipto@yahoo.com

249	Shibu Vijayan	Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum	Ph (W) : 91-471-2524140 Ph (H) : 91-474-2796067 Fax : 91-471-2524140 shibuvij@gmail.com
250	Shilpa Karvande	The Maharashtra Association of Anthropological Sciences, The Centre for Health Research and Development, Pune, Maharashtra,	Ph (W):+91-20-25884150 shilpawal@yahoo.com
251	Shiny C Alex	Faculty of Health & Medical Sciences, Allahabad Agricultural Institute-Deemed University, Allahabad,	Ph (W) : 919495684114 Ph (H) : 91 4813252931 swathy73@yahoo.com
252	Shobha G.	G-243, Sector 19 Gandhinagar, Gujarat 382019 India	Ph: 09427613288 hobhathiru@gmail.com
253	Shyam Swarup Sharma	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
254	Shyamali Rudra	FETP scholar, National Institute of Epidemiology, Chennai, India,	Ph (W):+91-044-65651587 Ph (H) : +91-033-24458283 Fax : +91-44-26357469 sdjb77@gmail.com
255	Shyamali Rudra	National Institute of Epidemiology, Ayapakkam, Chennai, India	Ph (W) : 91-44-26357156 Fax : 91-44-26357464 nieicmr@vsnl.com
256	Sivan	Community Medicine, PSG Institute of Medical Sciences & Research, Coimbatore, India	Ph (W) : 0422-2570170 Ph (H) : 0-98942-46313 Fax : 0422-2594400 yssivan@rediffmail.com
257	Sobhana Ranjan	Department of Foods and Nutrition, Institute of Home Economics, University of Delhi, F-4 Hauz Khaus, Delhi	Ph (W) : 09871076449 Ph (H) : 011-27602260 sobhanaranjan@rediffmail.com
258	Sonal Sekhar Miraj	Amrita School of Pharmacy, AIMS Campus,Elamakkara Miraj(H), Velur West(PO),Atholi,Kozhikode Cochin 682026 India	Ph: 9447111182 ask4sonal@yahoo.co.in
259	Sonam Lhanubhutia	WHO Fellow-FTP Trainee	
260	Soumitra Ghosh	International Institute for Population Sciences, Mumbai	Ph (W) : +91-22-25563254 Ph (H) : +91-22-25563256 Fax : +91-22-25563257 soumitraiips@gmail.com

261	Soumya Deb	All India Institute of Hygiene and Public Health, Kolkata, India,	Ph (W) : (0)9830212780 Ph (H) : (033)24727241 debsoumya@rediffmail.com
262	Soumya Sarkar	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
263	Sowmini C V	Medical Research Officer, HRRC/ICMR, Department of Obste. & Gyna, SAT Hospital, Trivandrum	Ph (W) : 091-9495627956 Ph (H) : 091-471-2447487, Email:sowminicv@gmail.com
264	Srihari J.S	Centre for Global Health Research, Bangalore, India	Ph (W) : 09902176649 Email:shriharijs@yahoo.co.in
265	Sriram Venkataraman	Department of Community Medicine, Medical College, Thiruvananthapuram, Kerala, India	Ph (W) : 9895286651 Ph (H) : 91-0484-2319627 sriramvram@gmail.com
266	Subhasis Bhandari	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
267	Sudharmini S	Department of Community Medicine, Medical College, Thiruvananthapuram, India	0471-2528379 Ph (H): 0944645313 sreeji007usa@yahoo.com
268	Sugam Bhatnagar	Intern, Government Medical College & Hospital, Aurangabad, Maharashtra, India,	Ph (W) : 091-240-2349543 Ph (H) : 091-9325305151
269	Sumit Shrimali	CAYMET, Quatre Bornes, Mauritius	Ph (W) : +2309316760 shrimali.sumit@gmail.com
270	Sumona Chaudhury	1609 Tremont Street Apmt 2, Roxbury Crossing, Boston MA 02120, US	Ph: 18574453733 sumonachaudhury@ doctors.org.uk
271	Sumona Chaudhury	1609 Tremont Street Apmt 2, Roxbury Crossing Boston MA 02120 US	Ph: 18574453733 schaudhu@hsph.harvard.edu
272	Supriya Bonnie Minz	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	

273	Suraj Dhankikar	Saptagiri Building, Plot No. 8, Vrindavan Colony, Near Bhagya Nagar City: Nanded Postal Code: 431605 Country: India	Ph: 09823436121 Fax: Ph: 09823436121 smriti_rd@rediffmail.com
274	Surender Nikhil Gupta	National Institute of Epidemiology, Ayapakkam, Chennai, India	Ph (W) : 91-44-26357156 Fax : 91-44-26357464 directorne@dataone.in
275	Suresh Badhan,	Community Medicine, MAM College, & HKMC Trust, New Delhi, India,	Ph (W) : 91-11-22560776 skboss@indiatimes.com
276	Sushil Mohanty	1,Prabhu Dayal MargNear Sanganer Airport Jaipur 302011 India	Ph : +919983667826 sushil.iihmr@gmail.com
277	Swati Dhankikar	Saptagiri Building, Plot No. 8, Vrindavan Colony, Near Bhagya Nagar City: Nanded Postal Code: 431605 Country: India	Ph: 09823436121 smriti_rd@rediffmail.com
278	Syed Shahid Abbas	Askari House, Askari Lane, Khan Mirza, Sultangunj, Patna 800006 India	Ph: 9871718317 abs014@gmail.com
279	Tammy Lea Farrell	P.O Box 530, City: Waverly, Postal Code: 2024 Australia	Ph: (+61) 0437 688 007 corehealth@ corehealthconsulting.com.au
280	Thandeka Myeni	62 South Huntington Ave, Apt #3, Boston, 02130	Ph: 678-777-4137 tmyeni@hsph.harvard.edu
281	Thresia C.U.	Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum	Ph (W) : 0471-2524248 Ph (H) : 0471-2441370 Fax : 0471-2553469 thresia@sctimst.ac.in
282	Tony Lawrence	Department of Community Medicine, Medical College, Thiruvananthapuram, Kerala, India	Ph (W) : 0471-2528379 lawrence.tony@gmail.com
283	Tumge Loyi	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
284	Ujjwala Gupta	MPH Student,2008 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
285	Upendra Maheshbhai Bhojani	#385, 2nd Floor, 33 B Main, 17th Cross, 6th Phase, J P Nagar Bangalore 570078 India	Ph: +91-9886639532 drupendrabhojani@gmail.com

286	Usha Kandaswamy	Division of Blood Transfusion Services, SCTIMST, Trivandrum, Kerala, India	Ph (W) : 04712524676 Ph (H) : 04712444540 donbank@sctimst.ac.in
287	Vamadevan S Ajay	Centre for Chronic Disease Control New Delhi India	Ph (W) : 91-11-26850117 drajayvs@gmail.com
288	Varalakshmi C	Public Health Research Institute CSI Holdsworth Memorial Hospital, Mysore, India	Ph (W) : 0091-9740394334 Fax : 0821-2565607 varimph@yahoo.com
289	Venkatesh Vinayak Narayan	MPH Student, 2007 Batch, Achutha Menon Centre for Health Science Studies Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum - 695 011	
290	Venugopal K.	Health Service, Medical College Hospital, Alappuzha, India	Ph (W) : +91 477-2252861 Ph (H) : +91 477-2262224 Fax : +91 477-2262224 dtovenu@yahoo.com
291	Vijayakumar G	Medical Trust Hospital and Diabetes Care Centre, Kulanada, Pathanamthitta, India	Ph (W) : +91-94470 60451 Ph (H) : +91-479-2366451 drgvijayakumar@gmail.com
292	Vimal Raj	Department of Microbiology, Government Medical College, Trivandrum	Ph: 9349107491 drvimalraj@yahoo.com
293	Vinita Datye	The Centre for Health Research And Development, The Maharashtra Association Of Anthropological Sciences, Pune Maharashtra	Ph (W) : +91-20-25884150 maaschrd@vsnl.net
294	Vipin Bihari	Epidemiology, Industrial Toxicology Research Centre, Lucknow,India,	Ph (W):0522-2627586 vipinbihari31@rediffmail.com
295	William Joe	Centre for Development Studies, Trivandrum, Kerala, India,	Ph (W) : 91 471 244 8881 Email:william@cds.ac.in
296	William Joe	Centre for Development Studies, Trivandrum, Kerala, India,	Ph (W) : 91 471 244 8881 william@cds.ac.in
297	Yelavarrthi R Padma	Indian Institute of Health & FAmily Welfare, Hyderabad, India	Ph (W) : 91-040-23810691 Ph (H) : 91-040-23743159 Fax : 91-040-23812816 yrpadma@gmail.com
298	Zubin Cyrus Shroff	E-22A East of Kailash, City: New Delhi 110065 India	Ph: 011-26462449 zshroff@hsph.harvard.edu

National Conference on
Emerging Issues in Public Health

ABSTRACT BOOK

About AMCHSS

Achutha Menon Centre for Health Science Studies (AMCHSS) is part of the Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST). Established in 1974, the SCTIMST, Thiruvananthapuram was made an institute of national importance by an act of Indian parliament in 1980. It is an autonomous institute and has the status of a university under the Department of Science & Technology (DST), Government of India. AMCHSS is the public health wing of the SCTIMST and offers a Masters programme in Public Health, the first of its kind in India.

Achutha Menon Centre for Health Science Studies (AMCHSS)
Sree Chitra Tirunal Institute for Medical Sciences & Technology (SCTIMST)
Thiruvananthapuram 695011, Kerala, INDIA.
http://www.sctimst.ac.in/